VOL. 87 NO. 8

C677
T35b

textile bulletin

AUGUST • 1961

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BPA NBP

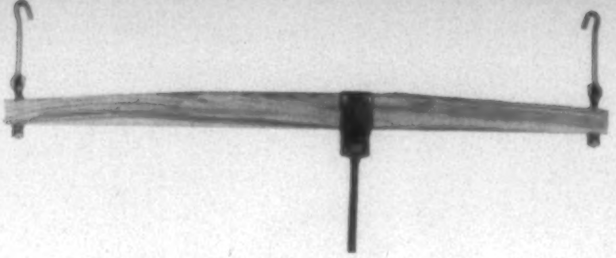
BAHAN PRECISIONEERED LOOM PARTS

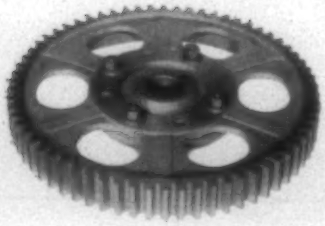
It's best, of course, to keep an adequate inventory of critical loom parts handy to your weave room. Sometime, however, emergencies arise that can seriously affect production unless the parts manufacturer can come through in a hurry. That's where Bahan shines. Usually, if you are located within 300 miles of the Bahan Plant, a late afternoon call to Bahan will have the parts you need at your dock before 10 A. M. next day. If you're in a hurry, it's better to call Bahan.

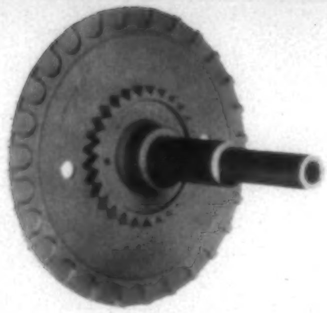
Telephone Greenville CH 4-4220

"I've found we get faster service from Bahan..."

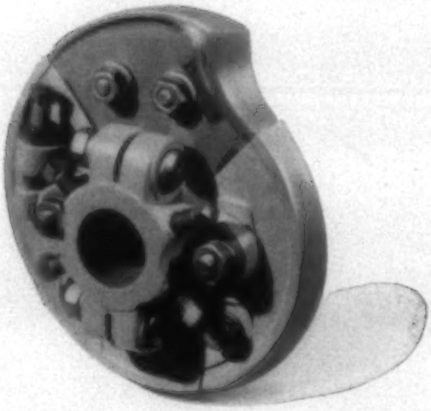
BAHAN TEXTILE MACHINERY CO., GREENVILLE, S. C.

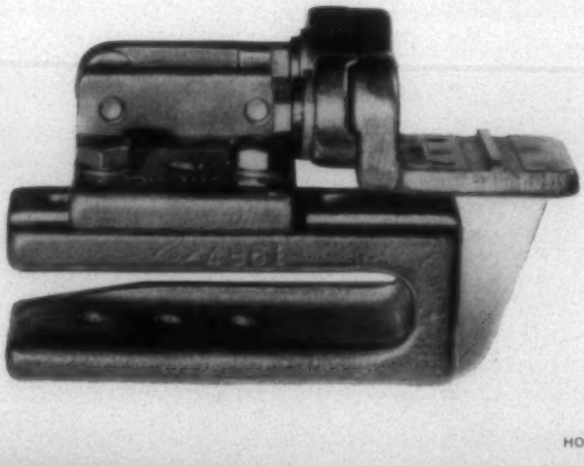






Draper repair parts are designed to give the maximum in loom performance ...day in, day out ...year after year.



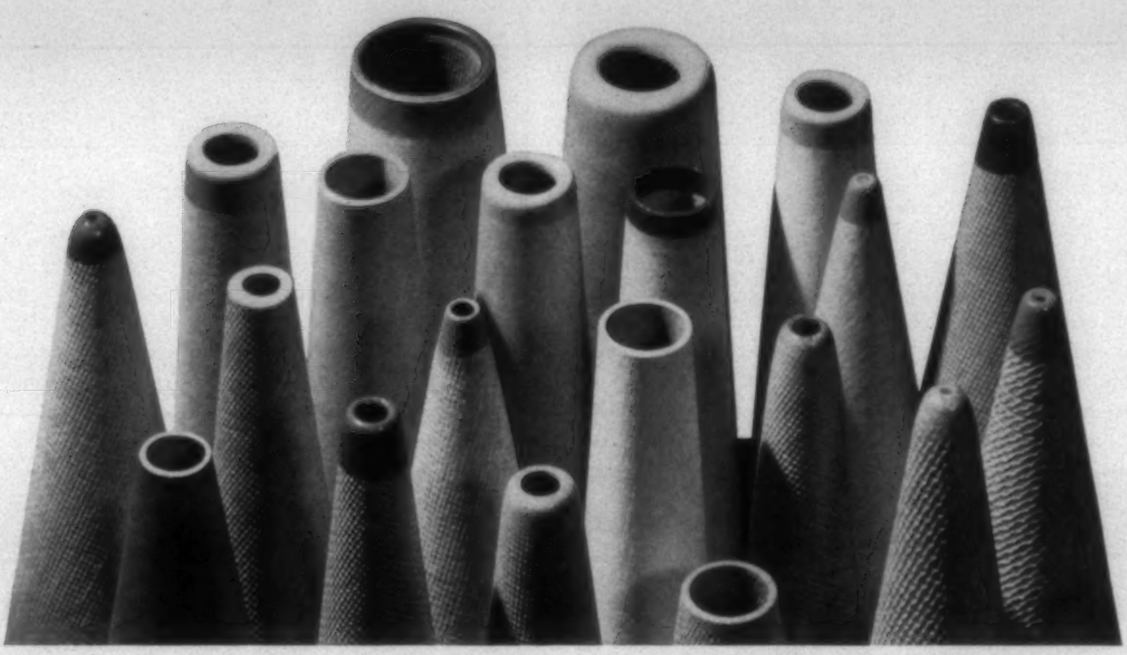


DRAPER CORPORATION

The Mark of Quality

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

The cone nose...
how important?



It is extremely important — in fact, it is one of the *most important* features of a cone. The correct nose insures free delivery of the yarn and this means a savings to you. Over the years Sonoco has devoted continuous research to perfect this one feature because it is essential to have the right "nose" *matched* with the yarn and processing conditions.

For example, the Regular or Crimped Round Nose is satisfactory in most instances, however the Straight Round Nose was developed for yarn with high moisture content and where relative humidities are excessive. There are varying degrees of crimping and rolling which permit a variety of sizes of holes in the cone "nose". "Plain Point" is a square cut "nose" not machined in any way. All "nose" types can be lacquer tipped, giving them a smooth, hard, moisture-resisting surface and a positive means for yarn identification. Dyes can also be applied for identifying purposes.

Continuing technical developments of this type, plus the consulting services of qualified sales engineers, provide an extra ingredient of quality representing more than 60 years of progress. *Only Sonoco,* in its field, provides the research and integrated manufacturing facilities required to serve the textile industry. *Let Sonoco experience help you!*

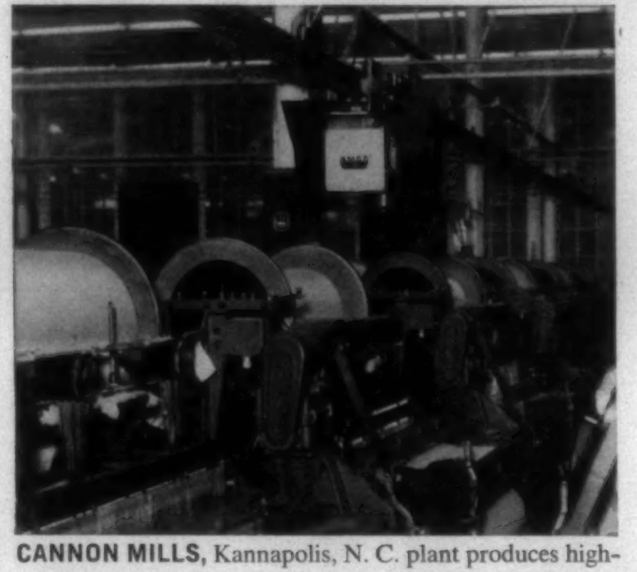
SONOCO
Products for Textiles

3097

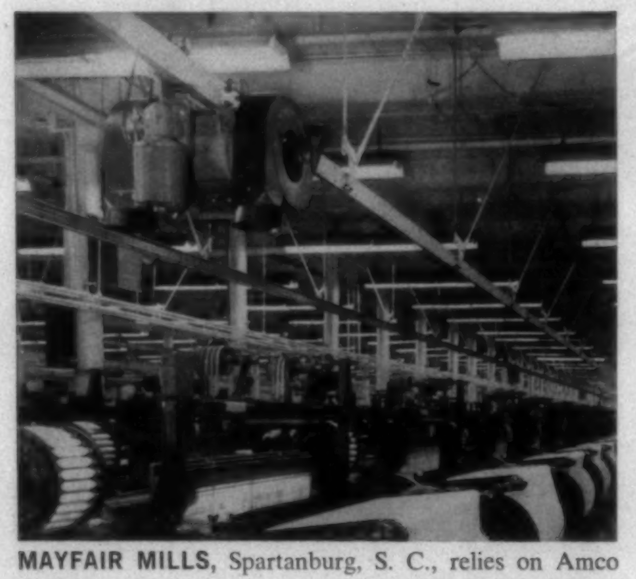
SONOCO PRODUCTS COMPANY, HARTSVILLE, SOUTH CAROLINA • Mystic, Conn. • Akron, Ind. • Ravenna, Ohio • Lowell, Mass. • Holyoke, Mass. • Phillipsburg, N. J. Longview, Texas • Philadelphia, Pa. • La Puente, Calif. • Fremont, Calif. • Atlanta, Ga. • Richmond, Va. • **MEXICO:** Mexico, D. F. • **CANADA:** Brantford, Ont. • Granby, Quebec

4 leading textile mills keep work areas clean automatically with Amco equipment

ALICE MANUFACTURING makes fine broadcloth in its Foster plant. Ceilings, walls, beams, pipes in card rooms are kept free from fly and lint with Amco Ceiling Cleaners. Result: fewer production interruptions for manual cleaning . . . and better quality.



CANNON MILLS, Kannapolis, N. C. plant produces high-quality terry cloth on looms equipped with Unifil loom winders. This fabric maker uses Amco Heliclone® Loom Cleaners for automatic, continuous cleaning. Result: greatly improved weave room cleanliness.



MAYFAIR MILLS, Spartanburg, S. C., relies on Amco Heliclone Loom Cleaners in print cloth weave rooms. Amco Cleaners drastically reduce manual cleaning costs . . . step up production . . . improve fabric quality by preventing waste accumulation.

PALMETTO WORSTED, Laurens, S. C. uses both Amco Heliclone Cleaners and Amco Ceiling Cleaners in its worsted spinning operation. Amco equipment prevents waste, lint and fly accumulations . . . boosts production and helps maintain quality.

Learn how Amco automatic cleaning equipment can help *your* mill. See your nearest Amco representative.

AMCO

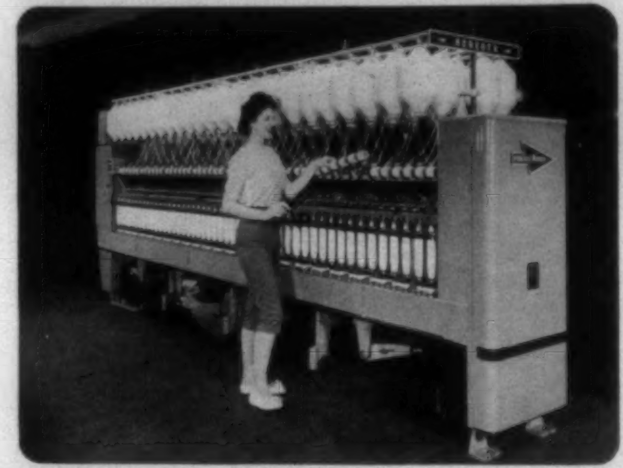
SINCE 1888

Air Conditioning Equipment — Textile Specialties

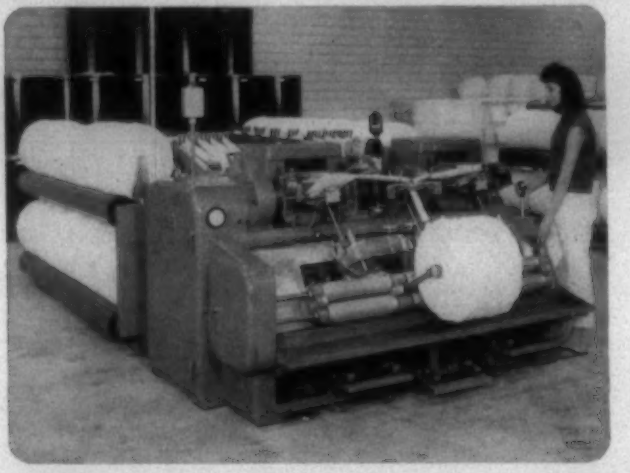
American Moistening Company, Cleveland, North Carolina Branches: Atlanta, Georgia, Providence, Rhode Island, Toronto, Ontario.

ROBERTS

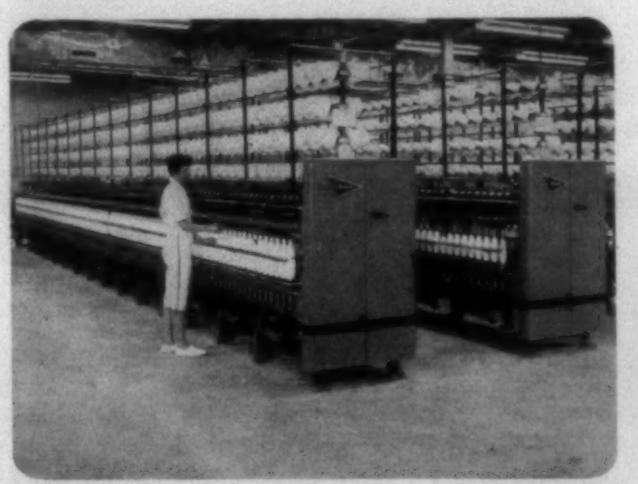
YARN MAKING MACHINERY for Cotton, Worsted, or Long Fiber Systems



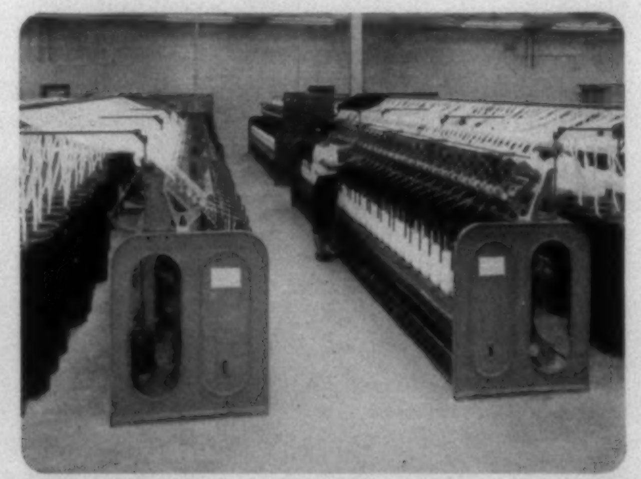
ROBERTS ARROW SPINNING for both cotton system and long fiber system yarn spinning for natural and synthetic fibers and blends. High speed, all ball bearing, big package Arrow Spinning Frames in 25-inch or 36-inch width. Exceptional flexibility and simplicity of operation in the manufacture of improved quality yarns at reduced costs and modest initial investment.



ROBERTS worsted system preparatory machines, including ParaBlenders, ParaDrafters and AutoEveners, are rugged, high performance machines for pinning, parallelizing, drafting and blending worsted and synthetic fibers prior to roving and spinning, and in top making plants. AutoEvener automatically and instantaneously corrects delivered sliver weight to within plus or minus 1%.



ROBERTS TWISTERS for plying yarns are completely ball bearing equipped and designed for high speed ring twisting operations. 25- or 36-inch frames. Up to 3½-inch rings and 12-inch bobbins. Package weights 1¼ pounds on cotton, ¾ to 1 pound on worsted.



ROBERTS ROVING FRAMES are ball bearing rebuilt and feature all-new heavy duty ball bearing Roberts Double Apron Drafting Systems for cotton, short staple or long fiber synthetics, worsted and blends. 10x5 and 12x7 packages. Provisions for double headed spools.

Simplicity of design, rugged construction and high speed ball bearing operation are the trade marks of all Roberts Company machinery. Roberts also supplies rebuilt spinning frames and modernization changeovers for mills' existing machinery.

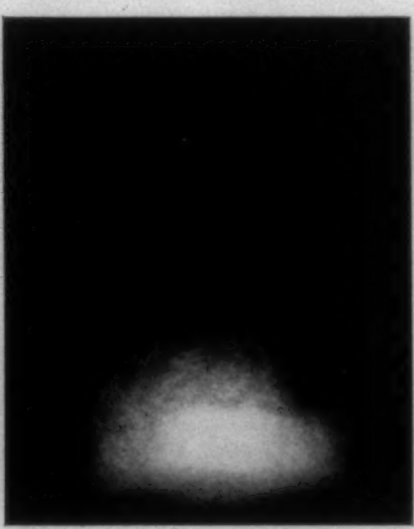
ROBERTS COMPANY
SANFORD, NORTH CAROLINA

This is Acrilan* acrylic fiber.

Known to 9 out of 10 consumers.

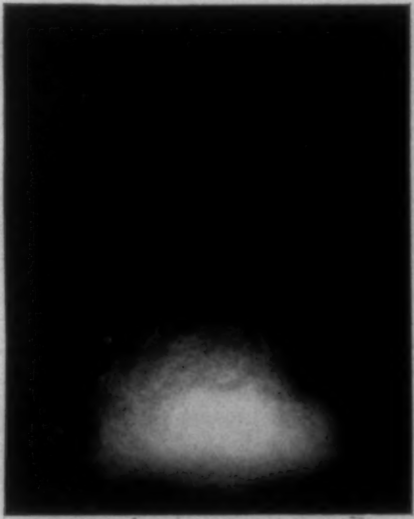
Used in over 100 different products.

Nationally advertised for 10 years...

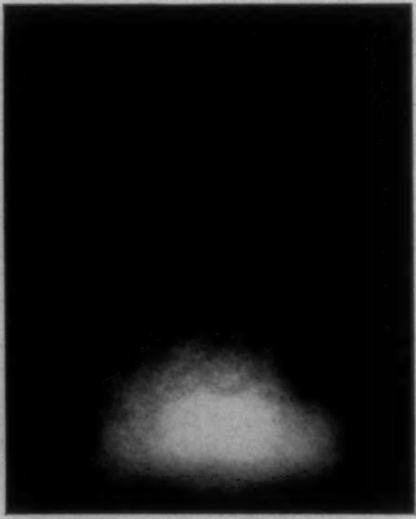


with billions of consumer impressions...

in major newspapers, magazines...



and big-time network television.



Versatile, profit-making ACRILAN!

A
ACRILAN
*
acrylic fiber
*REG. T. M. OF CHEMSTRAND

Chemstrand has licensed this **"A"-Acrilan trademark** as an ingredient trademark for those fabrications that provide utility, styling and consumer value. In order to obtain a license to use this trademark, the fabrications must meet certain rigid specifications as established by The Chemstrand Corporation.

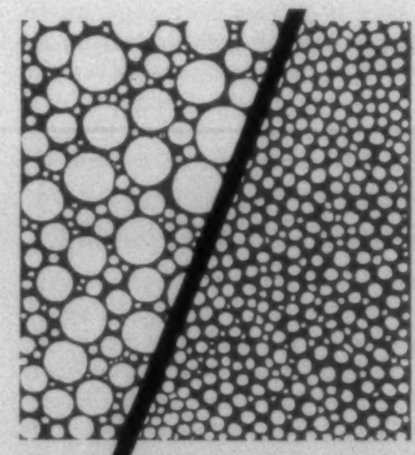
For All Your Needs in '62

THE CHEMSTRAND CORPORATION

Chemstrand makes only the fiber; America's finest mills and manufacturers do the rest.

GENERAL SALES OFFICES: 350 FIFTH AVE., N.Y. 1, N.Y. • DISTRICT SALES OFFICES: 350 Fifth Ave., New York 1; 3½ Overwood Rd., Akron, Ohio; 129 West Trade St., Charlotte, N.C.; Canadian Agency: Fawcett & Co., 34 High Park Blvd., Toronto, Canada • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala.; CHEMSTRAND® NYLON—Pensacola, Fla.

Now use any price starch!



Boiled size on left is coarse, irregular and unevenly mixed. While Gaulin-Homogenized size at right is smooth, regular and evenly mixed.

Control Size Viscosity Accurately with a Gaulin Homogenizer

More than 12 years of successful experience in hundreds of mills proves a Gaulin Homogenizer is the best way to maintain accurate viscosity control on any starch.

It's uniform. Just set the pressure for the desired viscosity. (For any given type of starch, the viscosity is a function of pressure.) A Gaulin Homogenizer reduces the human element in size-making . . . automatically maintains the right viscosity.

Even a low-priced pearl starch makes a better size when Gaulin Homogenized. It penetrates yarn lightly but evenly — bonds fibers together smoothly, firmly . . . without coating or matting and making them brittle. You get a more elastic yarn that *sheds less* . . . and *breaks less* at the loom and slasher.

Costs less. Hundreds of mills have proven it. Whether prepared continuously or in batches, every drop of Gaulin-Homogenized size has a uniform viscosity. It's smooth, regular and evenly mixed. Your savings can be substantial.

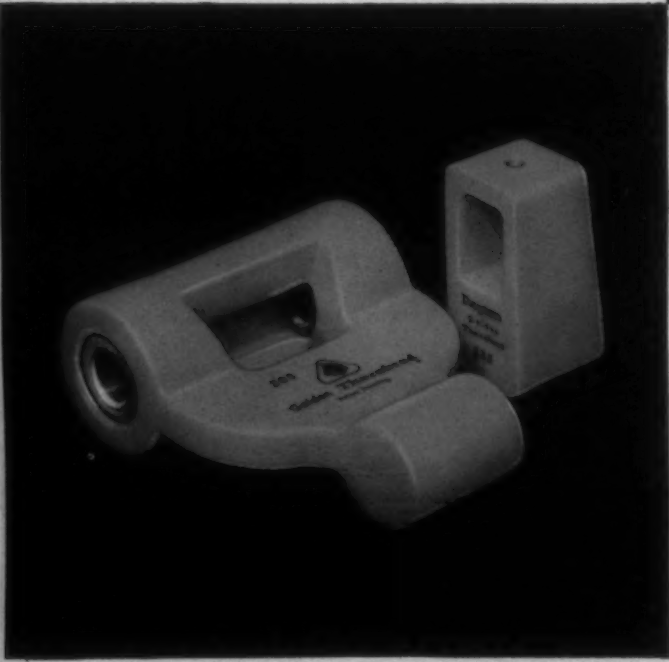
See your local Manton-Gaulin representative for complete details.

MANTON-
Gaulin
MANUFACTURING CO., INC.
53 Garden Street, Everett 49, Mass.
Southern Representative
Hayes Textiles, Inc., P.O. Box 2135, Spartanburg, S.C.

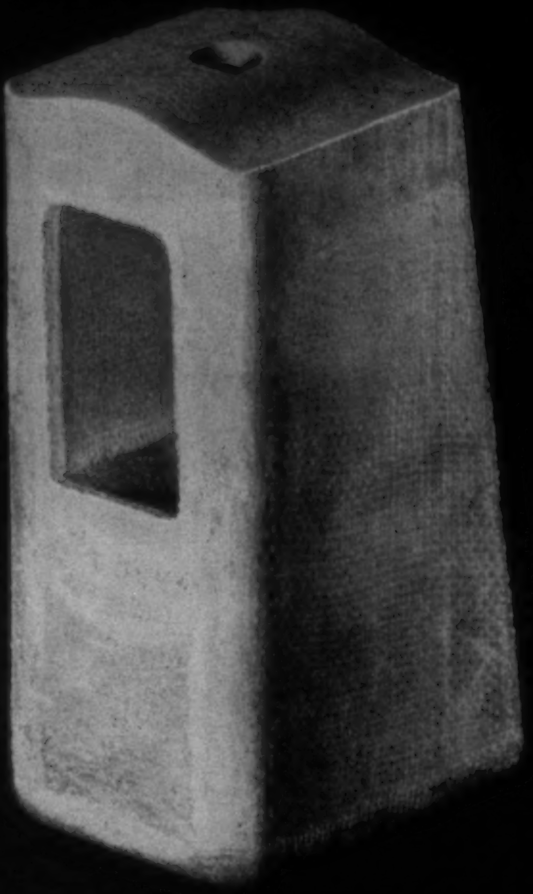
MG 1-18

You name it,
Dayco makes it...

a Thorobred Picker to handle any assignment!



Newest of Dayco's Thorobred Drop Box Pickers is the Golden Thorobred, fully molded in one piece from an ultra-high molecular polyester. Careful in-use studies show that its life expectancy is 10 times that of the conventional picker. If you've used the Golden Thorobred Drop Box Picker and liked it, you may wish to try the Golden Thorobred Loop Picker, now available in many sizes.



1. Dayco Thorobred Premium Loop Picker, readily identified by its gold back . . . rugged and always reliable.

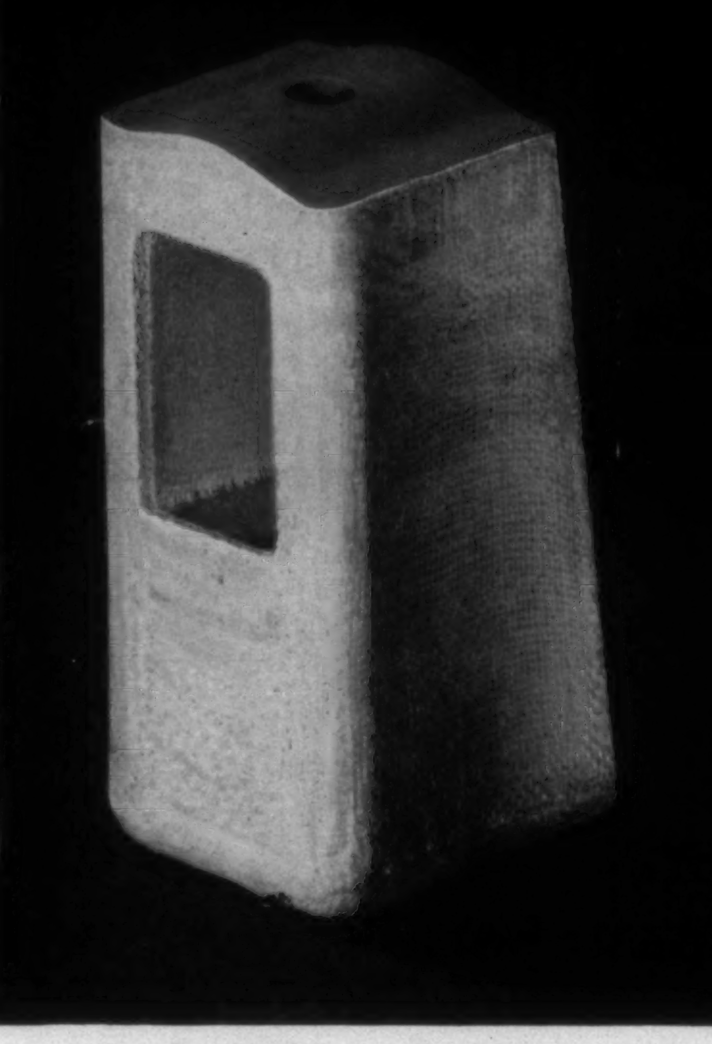
Meet the full family of Dayco Thorobred Loop Pickers! With their help, you'll substitute high production levels for the down-time so often resulting from picker trouble. You'll see the difference in cloth quality that superior picker performance can make. And you'll see a big difference in *quantity*, too.

First, the Dayco Premium Picker. It's really rugged—so sturdy and resilient it amazes even experienced mill men. Once they've become accustomed to its superior performance—even in operations that require the very best—they're sold on Dayco Premium! And little wonder. Keeping perfectly in time through millions of picks, the Premium stays on the job far past normal time for replacement.

Bring On Your Toughest Assignment

Perhaps the best way to explain what the Dayco Premium Picker can do is simply to say: bring on your toughest assignment. See the way that this quality loop picker will tackle it. You'll like what you see.

A second outstanding loop picker from Dayco is the Dayco Thorobred Super. Very likely you're already familiar with the Super, for its record of fine



2. Dayco Thorobred Super Loop Picker, white with red back . . . designed with modern loom requirements in mind.

3. Dayco Thorobred Standard Loop Picker, black with red back . . . for excellent service on E model looms and slower.

performance comes into the conversation almost as often as textile men talk shop together.

Like the Dayco Premium, the Super is fully able to cope with the demands of modern weaving equipment. It's able to withstand the weight of heavier plastic shuttles . . . it's at home with longer quills and higher loom speeds. Use the Dayco Thorobred Super Loop Picker and see if you don't agree: its ability to withstand the continual thrust of the shuttle—without loosening or early wear—is truly impressive.

Pay For What You Need

Economy of operation dictates, of course, that you pay for no more than you need. Yet, even where less is required of a picker, it must fully measure up to what *is* required, or "economy" turns into expense and waste. Dayco again supplies the answer: the Dayco Thorobred Standard Picker, recommended for E Model and slower looms.

Like the Premium and the Super, the Dayco Standard Picker is built in one piece. There's nothing to break or distort when it's driven onto the stick. And, like all Dayco Thorobred Pickers, the Standard gives perfect shuttle contact. The picker-stick hole is slightly tilted. The flared bottom permits easy, accurate seating. And the Standard stays exactly in position, for perfect alignment with the shuttle.

Pick a Dayco Picker

How can a lower-priced picker offer so much? The answer is simple. Dayco engineers design *each* picker to measure up to the demands that will be placed on it. But the same basic principles . . . procedures . . . and precision that help make the Premium as good as it is are adhered to in producing *every* Dayco picker.

Premium, Super and Standard, they're available in many sizes, to meet every possible requirement. So to pick the picker that's best for any given operation, simply contact your Dayco jobber. Or write or phone Dayco Textile Products Co., 401 S.C. National Bank Bldg., Greenville, S. C., for further information. Overseas Plant: The Dayton Rubber Co., Ltd., Dundee, Scotland.

Dayco
TEXTILE PRODUCTS
Division of Dayco Corporation

The COCKER

MB-55-32

Multiple Beam Tricot Warper is

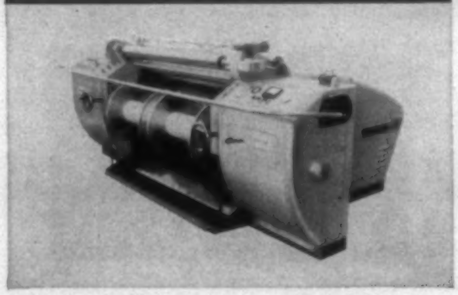
EXTREMELY VERSATILE

A Battery of Cocker Tricot Warpers in One of the World's Finest Mills

The MB-55 offers great economies to mills which produce a wide variety of tricot beams. It will accommodate single beam widths from 40″ through 55″ between flanges, and double beams from 19″ through 25″ in width—up to 32″ in diameter. Changeover from one assembly to another is rapid and simple.

Constant beam density, which is maintained by a horizontal plane presser roll, is another advantage of the MB-55. Loading of roll can be either pneumatic or hydraulic. Special presser roll carriage construction increases accuracy of roll loading.

The MB-55 provides an electro-magnetic brake for each presser roll assembly and for each spindle. This permits the most rapid stops—even at 600 YPM—without slacking or rolling of ends due to beam back-up.



The MB-55-32 with Dual Beam Assembly

Accessibility is another feature of this machine. Easily removable panels permit access to internal parts without disturbing the yarn or stopping the warper. Individual controls are within full view and easy reach of the operator.

The Cocker MB-55 offers you flexibility and economies not found in other tricot warpers.

Write for Full Information Today

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:
Contact W. S. Clark
Montreal, Canada
Oxford 7-2242

IN MEXICO:
Ing. J. Via, Jr.
I. La Catolica 45-911
Mexico, D. F.

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WORLD'S LARGEST DESIGNERS
AND BUILDERS OF COMPLETE
WARP PREPARATORY EQUIPMENT

This Saco-Lowell Rovematic Frame is now in operation in one of the nation's most modern textile plants.

Saco-Lowell's New Rovematic Increases Roving Output by 60% . . . Cuts Operating and Maintenance Cost Even More

Orders are being taken now by Saco-Lowell Shops for fall delivery of Rovematic Roving Frames. An entirely new concept that breaks with the past, Rovematic delivers a 14" x 7" package of superior roving with a flyer speed of 1,200 R.P.M. maximum and a front roll (1⅛") speed of 350 R.P.M. maximum.

Rovematic is specifically designed to set new industry standards. On the basis of actual mill experience, the production of 8 Rovematic frames has been equal to 13 conventional frames. Rovematic makes obsolete the heavy traversing carriage, cones, and all related mechanisms.

Built for Better Performance. Utilizing the FS-2 drafting system with Tru-Set weighting, Rovematic is easy to operate. Its unique telescoping spindle permits quick doffing without removal of the dynamically balanced flyers. Because its major components are enclosed in sealed cases and run in oil baths, with all change gears grouped together, Rovematic is the cleanest and the easiest-to-operate frame available.

Backed by Better Service. Behind the Rovematic, as behind all Saco-Lowell textile machines, lies a two-fold purpose: to give you the equipment and assistance you need when you need it . . . and to add to your profits through lower cost. Call in our nearest Sales Engineer today.

SACO-LOWELL SHOPS
TEXTILE MACHINERY DIVISION
EXECUTIVE OFFICES: DRAWER 2327, GREENVILLE, S.C.
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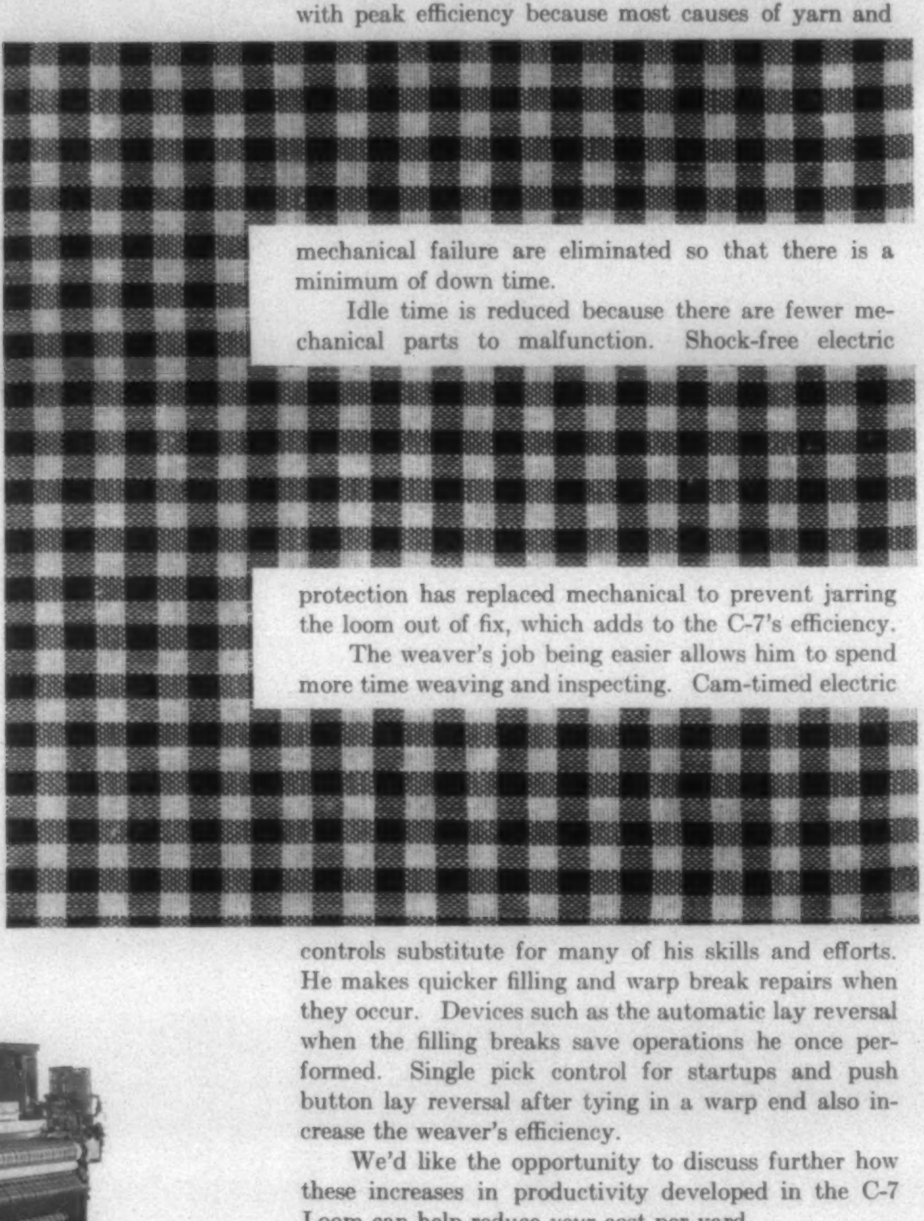
GREENVILLE, S.C.—P.O. Box 1698; CHARLOTTE, N.C.—P.O. Box 149;
GREENSBORO, N.C.—601 N. Elm St. Bldg.; SACO, MAINE—P.O. Box 230

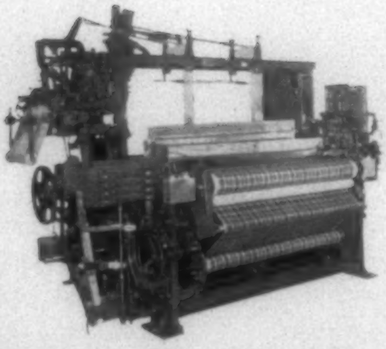
EFFICIENCY of a loom combined with Speed determines its ultimate Production—the amount of cloth woven in a given time. C&K's C-7 Loom operates with peak efficiency because most causes of yarn and mechanical failure are eliminated so that there is a minimum of down time.



Idle time is reduced because there are fewer mechanical parts to malfunction. Shock-free electric protection has replaced mechanical to prevent jarring the loom out of fix, which adds to the C-7's efficiency.

The weaver's job being easier allows him to spend more time weaving and inspecting. Cam-timed electric controls substitute for many of his skills and efforts. He makes quicker filling and warp break repairs when they occur. Devices such as the automatic lay reversal when the filling breaks save operations he once performed. Single pick control for startups and push button lay reversal after tying in a warp end also increase the weaver's efficiency.

We'd like the opportunity to discuss further how these increases in productivity developed in the C-7 Loom can help reduce *your* cost per yard.



QSEWMT

QUALITY OF CLOTH · SPEED OF LOOM
EFFICIENCY · WEAVER ACCEPTANCE
MAINTENANCE COSTS · TRAINING TIME

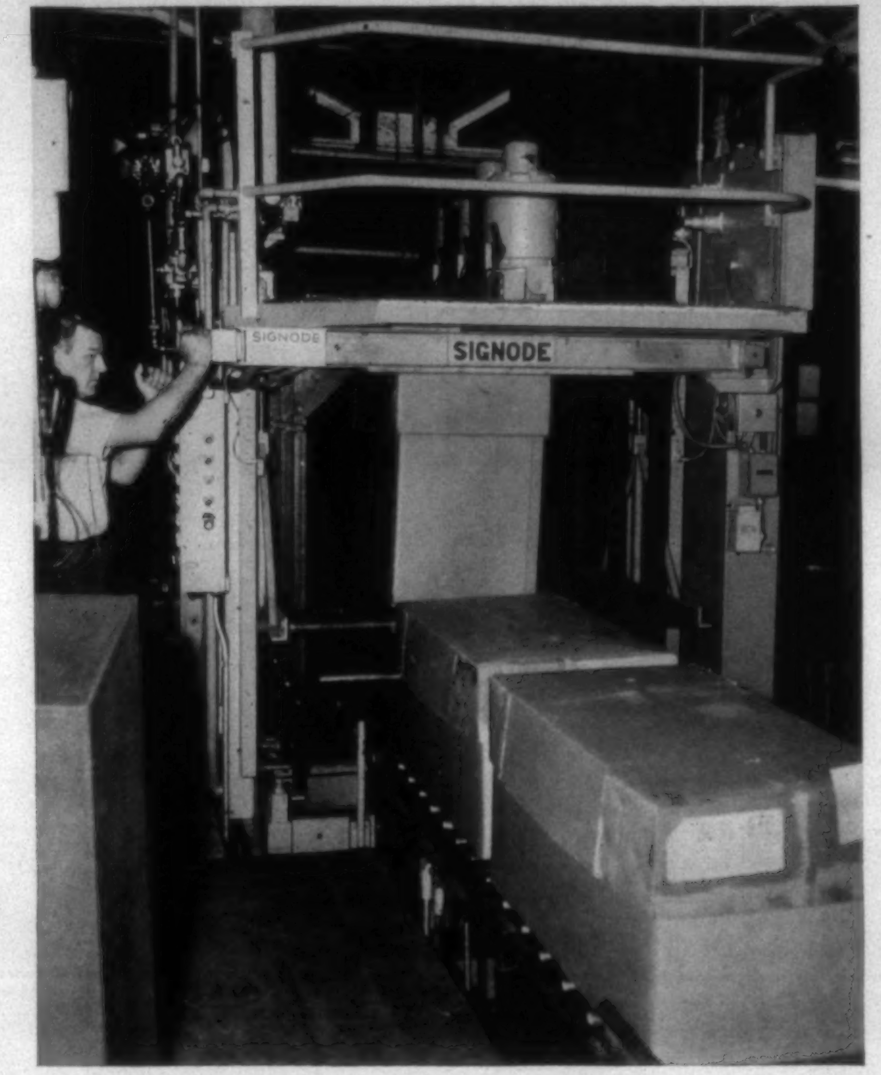
CROMPTON & KNOWLES CORPORATION

WORCESTER, MASSACHUSETTS

C&K

WORLD LEADERSHIP IN AUTOMATIC BOX LOOMS–RESEARCH–ENGINEERING–MANUFACTURE

CHARLOTTE, N. C. / ALLENTOWN, PA. / CROMPTON & KNOWLES JACQUARD & SUPPLY CO. PAWTUCKET, R.I. / CROMPTON & KNOWLES OF CANADA, LTD., MONTREAL, QUEBEC



One man weighs, marks and straps a volume flow of textile cartons

with a Signode Texomatic CSM

With a Signode Texomatic compression strapping machine, this operator weighs, marks and straps a mixed flow of cartons as they move from the textile production line. At the push of a button, the Texomatic CSM automatically lifts to compress the load, then feeds, tensions, seals and severs one, two, or three straps simultaneously in about 12 seconds. This gives the operator sufficient time to weigh and mark the cartons without interrupting their flow, and permits maximum savings in time, effort, and attention.

The new Texomatic is powered by three superbly-engineered M-20 heads with the known ability to operate continuously without attention through a million cycles or more. The M-20 strapping units are simply designed, easily accessible, and powerful enough to prevent overloading at fast speeds and high tensions. The sturdy, rugged, rack and pinion gear assembly gives positive action in raising and lowering; construction of the Texomatic is greatly simplified through the "lift to compress" action.

Let an experienced Signode man help you select the Texomatic compression strapping machine that meets your particular requirements. Write:

SIGNODE

First in steel strapping

SIGNODE
STEEL STRAPPING CO.
2665 N. Western Avenue • Chicago 47, Illinois
Offices Coast to Coast, Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

For The Textile Industry's Use

— NEW MACHINERY, EQUIPMENT AND SUPPLIES —

Control Device Designed To Avoid Slasher Overdrying

Mount Hope Machine Co., Taunton, Mass., has developed a new device called the Textometer for measurement and control of moisture by electrical conductivity.

Designed for use on slashers, tenter frames or dryers, the unit uses electrodes to detect the slightest changes in moisture deviation. Since residual moisture increases with machine speeds, the automatic Textometer simply adjusts the rate of speed of fabrics coming from slashers, tenter frames or dryers.

Slightest changes in moisture trigger the unit since resistance in thousands of ohms changes drastically with even minimal deviations in moisture percentages. For example, cotton with 3.5% moisture has a resistance of 100,000 ohms; 4.5% moisture, 10,000 ohms; 12%, 1,000 ohms.

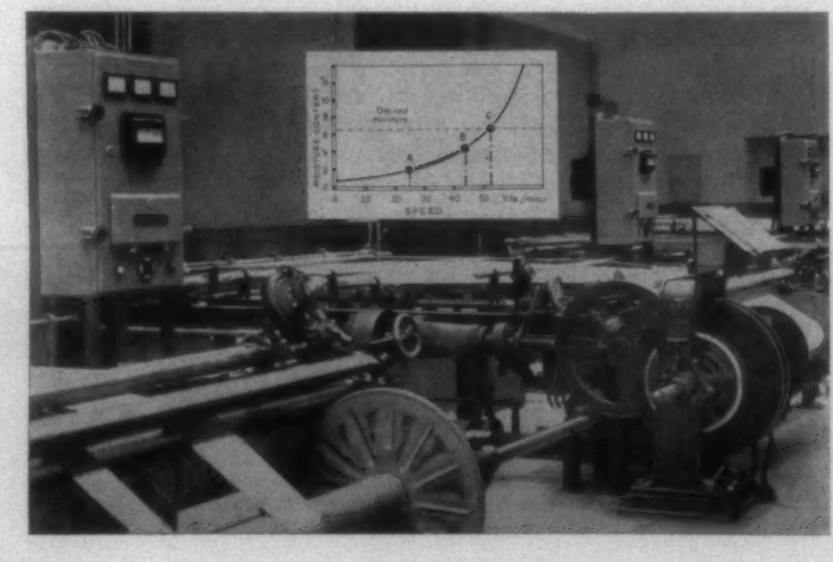
To obtain optimal measurement accuracy, electrodes are mounted on an arm or bar near the end of the dryer or just beyond the tenter frame or slasher, at strategic points across the warp. As the electrodes sense residual moisture, they relay deviations to the Textometer panel in the case of automatically-operated units. In the case of the manual units, an optical panel indicates the condition of the fabric. A flashing green signals dry; a stable yellow means optimum moisture; a flashing red means moist.

The light panel can be included with automatic units to give quick visual performance information. Also a special optical line or point recorder may be included to record permanently the material quality, moisture content, downtime and changes in machine speed.

When the machinery is idle, the Textometer automatically cuts off. At start-up, it adjusts automatically to start-up moisture content, forcing the machine to operate at optimum speeds until the fabric reaches the desired content level.

A portable battery-powered Textometer for use in plant labs or store rooms is also available.

(Request Item No. H-1)



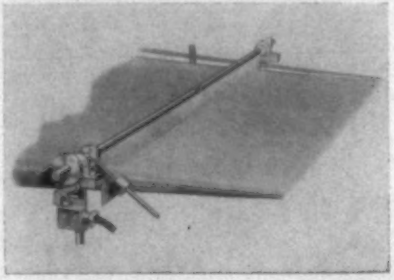
The Mount Hope Textometer reacts to moisture deviation by adjusting the rate of speed of fabric coming from the slasher. Faster slasher speeds result from elimination of overdrying.

New Unifil Loom Winder Takes Quills Up To 8¾"

Leesona Corp., Providence, R. I., is beginning the manufacture of a new Unifil loom winder engineered specifically for cotton looms using 8¾" quills. The new model, designated as No. 791, winds quills up to 8¾" long and 1½" in diameter. The larger quills to be handled by the new model will further reduce weaving costs, particularly on heavy filling yarn counts, the company states. Leesona also reports that the No. 791 Unifil is capable of winding filling yarns as heavy as 1.25's singles cotton count. Lint protection and other modifications important in cotton weaving which have been made to the earlier model Unifil are also incorporated in the new model.

(Request Item No. H-2)

Slasher Attachment To Prevent Break-Outs



Steel Heddle Mfg. Co., Philadelphia, Pa., is offering a new development in slasher control called the Stehedco Slasher Break-out Control for the prevention of slasher break-outs from tangles and mat-ups.

Developed at the company's Southern Division in Greenville, S. C., the control consists of an inverted comb mounted above the yarn sheets. If a tangle or snarl reaches the comb, it is pivoted forward activating a micro-switch which automatically sets the slasher controls to slow speed. The comb is counterbalanced to offset the natural friction of the yarn sheets, and will react only when an unnatural drag is exerted against it, such as would be the case with a mat-up or tangle.

The attachment comes complete with all necessary components and mounting brackets.

(Request Item No. H-3)

Warp Size Binder

Polymer Industries Inc., Springdale, Conn., has developed Polyfilm B-2, a universal binder for starch-based warp sizes for synthetic, natural and synthetic/

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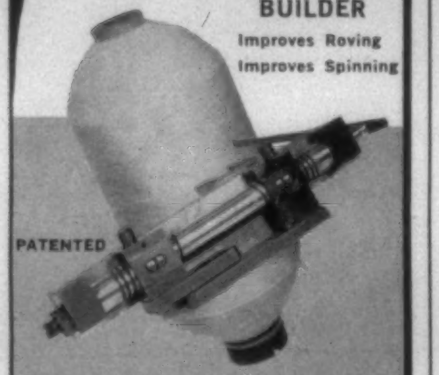

PSC VARI-PITCH ROVING BUILDER improves running conditions and increases the effective volume of the roving package.

IMPROVES ROVING
- Less tangled bobbins
- Less break-backs
- Reduces creeling time

IMPROVES SPINNING
- Lower ends down count
- Longer runs
- Less sluffing-off in handling
- More yardage on bobbin

Fits Whitin and Saco-Lowell roving frames.

LARGER PACKAGE
The effective lead or pitch of the Vari-Pitch screw increases as additional layers of roving are placed on the bobbin, causing the length of stroke to decrease at a rate greater than that of the bobbin diameter. This feature produces a **CONVEX TAPER** of the bobbin that will add additional weight to the package and give you longer runs per bobbin. The **LARGER PACKAGE** will also reduce creeling time. You will have less waste by having fewer pieces.

INTERCHANGEABLE
The Vari-Pitch Builder is interchangeable with all types and makes of American made roving frames.

COMPLETE UNIT
The new Vari-Pitch Builder Assembly is a complete unit and includes a new square shaft and universal joint.

EASY INSTALLATION
Remove the old builder (one bolt Whitin—two bolts Saco-Lowell). Replace with the PSC Builder, first sliding the new square shaft into the builder rod gear, and then bolting the builder securely to the frame.

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natural fiber blends, which is designed to improve loom efficiency and fabric quality.

Polyfilm B-2 is a water-dilutable acrylic resin formulated to improve film strength, surface and adhesion of starch to synthetic and natural fibers. It is said to improve conventional and modified starches and starch gums. Supplied in liquid form, it may be added at any point in the size cooking cycle. Polyfilm B-2 is said to be readily dilutable and to disperse completely thus providing uniform, reproducible results from one make-up to another from day to day.

The binder is effective on a wide range of synthetic fibers and blends such as 100% acetate, acetate-viscose, 100% acrylic and many others. For hard to size fibers producing hairy yarns, Polyfilm B-2 reduces "clinging", "shedding", "fluff balls" and "floats." It is described as excellent for seersucker, gabardines, twills, etc., requiring maximum flexibility.

Polyfilm B-2 is said to eliminate the need of special boil-off techniques and to provide smooth dyeing because it is easily, completely and uniformly removed by normal handling methods, including conventional enzyme baths. A clear solution, Polyfilm B-2 has indefinite storage life under normal conditions.

(Request Item No. H-4)

Worm Gear Arrangement Provides 3600:1 Reduction

Cleveland Worm & Gear Division of Eaton Mfg. Co., Cleveland, Ohio, reports that reductions of up to 3600:1 have been attained by mounting a worm and gear at a 90° angle to one another. Together with enclosed housings, the double reduction speed reducer is available in a wide selection of ratios ranging between approximately 25:1 and 3600:1. Units come in seven sizes with torque capacities ranging approximately between 22,700 inch-pounds and 145,000 inch-pounds.

Primary and secondary reduction housings are parallel to one another. The high speed housing is cooled to A.G.M.A. Standards by an aluminum or plastic fan. In addition, large oil bath capacities and deep fins on both housings are designed to keep operating temperatures below a 100° rise above ambient. Both reductions share a common oil bath.

Gears are of a high tin content bronze centrifugally cast for increased resistance to wear and fatigue pitting. They are shrunk and keyed or bolted to cast iron hubs, which are keyed to steel shafts of a high overhung load capacity. Worms are of the convolute type; both thread flanks are ground simultaneously for attaining the most precise thread form. Worms are hardened by a special heat treatment process designed to provide a high degree of hardness throughout the entire thread thickness to well below the worm root diameter while retaining the advantage of a core of medium hardness.

(Request Item No. H-5)

Spinning Changeover

A new double apron spinning changeover designated as SG-3D has been announced by Saco-Lowell Shops for converting all Gwaltney spinning frames equipped with the original single apron SG-1 or Shaw system to the Duo-Roth system.

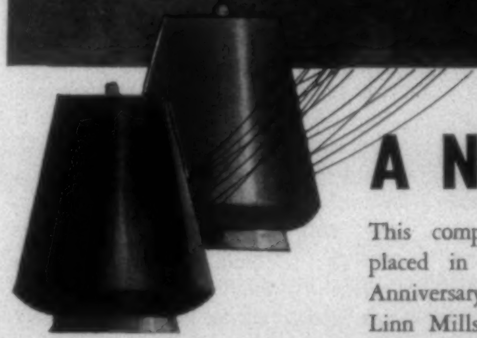
The new changeover, designed to provide a more effective control of the fibers in the draft zone, incorporates the anti-friction features of the present SG-3 Duo-Roth system. The angle of the roll stand in respect to the horizontal remains at 60° and utilizes the original Gwaltney top arm weighting, reducing the number of parts required for most changeovers. It is therefore relatively simple to install and requires a minimum of down time per frame.

(Request Item No. H-6)

Thermosetting Resin

Onyxset A, a new reactant thermosetting resin designed to produce a high stabilizing efficiency, has been developed by Onyx Chemical Corp., Jersey City, N. J.

The resin is a colorless stable liquid designed to impart high shrinkage control and durable crease resistance to all types of cotton and rayon fabrics, while producing a soft hand, according to Onyx Chemical. It's also designed to be highly efficient in the production of dur-



A NEW NAME IN DYED YARNS

This completely new dye plant was placed in operation during the 60th Anniversary of its parent corporations—Linn Mills and Corriher Mills. These mills have been large producers of high quality combed and carded knitting yarns since 1900.

Since the management of Corlin believes in quality and intends to produce top quality dyed yarns, all of the production and laboratory machinery bears the Gaston County name plate. Equipment includes the most modern designs in dyeing machines and static pressure rapid dryers

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able mechanical finishes, such as embossed, schreinered and glazed finishes.

Uses for the resin include wash-and-wear, drip-dry and permanent mechanical finishes where resistance to chlorine bleaching is not required, such as on dyed and printed cottons and dyed rayon goods.

Some advantages suggested for the finish by the company are: high crush resistance; shrinkage control; durability; unlimited stability; soft hand; resistance to discoloration; compatibility; effective with all types of catalysts; excellent solubility; and has no effect on the lightfastness of reactant dyes.

Although there are many formulas suggested by Onyx for the resin, the application is relatively simple. First, all goods to be resin treated are thoroughly scoured and desized, rinsed and dried, making sure that the fabric is neutral before resin treating.

The treating solution is prepared by adding the resin to water in a mix tank, together with a catalyst, softener and other finishing chemicals. This mix is fed to a padder or mangle, adjusting the roll pressures to give approximately an 80% wet pick-up.

The goods are then dried on a tenter frame at 210 to 230° F., avoiding excessive stretching where good shrinkage control is desired. For mechanical finishes, they are dried to a moisture content of approximately 8% and are rolled up for transfer to the mechanical finishing machines.

For flat finishes with the resin, the dried goods are cured in a cure box, loop box or frame. The duration of curing time will depend on the temperatures—4 minutes at 300° F.; 2½ minutes at 340° F.; or in 20 to 40 seconds in a high temperature (700° F.) infra-red flash curing unit.

For maximum durability and freedom from odor formation, the goods should be given a light afterwash with a non-ionic detergent and ¼% soda ash, followed by rinsing and drying, according to Onyx.

(Request Item No. H-7)

Materials Handling Kits

Acme Steel Co., Chicago, Ill., has developed a new line of kits which industrial users can assemble into storage units, special-purpose racks, work benches, tables and carts.

For Acme Steel the new line represents an extension of its AIM brand slotted angle framing material by a new merchandising method. The kits are designed to offer an easier and lower cost way to acquire the most needed styles and sizes of the units. Slotted angle is a framing material made with an exclusive pattern of slots and holes to allow quick assembly by bolting. Formerly, it was available only in standard lengths. Customers then sheared it to the lengths needed and assembled the pieces into units. With the new kits, all parts are cut to length and all assembly hardware is provided.

Included in the line are 120 storage units, 82 storage racks, 17 work benches, 13 tables plus a foreman's desk, and 27 regular and heavy-duty carts.

(Request Item No. H-8)

Aluminum Roving Can

Aluminum Products Co., Gastonia, N. C., has introduced an aluminum roving can called the Commander. The unit is constructed of aluminum sheets and aluminum extrusions. It is welded with Argon shielded welds. The roving can is 42" in height and 18" inside diameter. Advantages cited for the new can include lighter weight and longer life.

(Request Item No. H-9)

Warp Yarn Inspector

A new, modular, warp yarn inspector developed by the engineers of Fabrionics Corp., is designed to provide complete protection against all objectionable defects of both length and diameter in one instrument. The new Mark III Warp Yarn Monitor counts defects, stops the warper for their removal, detects end breaks and detects length changes.

The new unit features modular design, giving greater versatility, flexibility and compactness while retaining dependability and economy of operation. Like earlier models, the Mark III is a photoelectric defect detector designed to positively catch all defects—even those as small as a single broken filament. The modular design of the new warp yarn monitor permits 2, 3 or 4 electronic modules to be included in the compact monitor housing. Depending on the user's needs, the modules selected would include a power supply and any desired combination of amplifiers and the Detect-All.

The Detect-All, formerly packaged as a separate accessory for the warp yarn monitor, is a sensitive detector that catches all linear defects above a predetermined size. Like the Monitor, it can either count defects or stop the warper. Its action is independent of that of the Monitor. The Detect-All is said to have unusually high accuracy because a timing device cuts out extraneous yarn noises that interfere with the signal from the photoelectric detector.

(Request Item No. H-10)

Sandoz Introduces Four Drimarene-Z Reactive Dyes

Release of four new Drimarene-Z reactive dyes—a yellow, a golden yellow, a navy and a bordeaux—has been announced by Sandoz Inc., New York City.

All are recommended for printing and pad dyeing, and are said to feature brilliance of shade, high fastness to washing and easy rinsing of unfixed dye.

Drimarene Golden Yellow Z-R p.a.f. is a reddish shade of yellow, with good build-up. It does not stain the "ground" color or white during soaping, even when printed at twice the standard depth, according to Sandoz.

Drimarene Yellow Z-5GL p.a.f. is a brilliant yellow, with very good light fastness, even after resin finishing, and excellent fastness to washing. It is suggested for the dyeing of grounds for discharges, as it is white dischargeable.

Drimarene Bordeaux Z-BL p.a.f. is a deep blue-red reactive dye which can be used for maroon and brown shades.

Drimarene Navy Z-2RL p.a.f. is a reddish shade of blue. In heavy percentages it is particularly useful for economical navies. In lighter depths it can be used for bright royal blues, the company reports.

(Request Item No. H-11)

Alarm Scanning Systems For Wet Processing

A new line of standard Series 7000 Digital Data Recording and Alarm Scanning Systems for automation of textile wet processing has been announced by Monitor Systems Inc., Fort Washington, Pa., a subsidiary of Epsco Inc. Series 7000 systems utilize the "building block" technique throughout. Through use of the modular design principle and selection of the appropriate black boxes from the standard building blocks available at M.S.I., the Series 7000 can be designed to meet the accuracy, speed and reliability specifications of most wet processing applications without costly over-design. Systems from the simplest to the most complex can be designed on practically an "off-the-shelf" basis without the long delivery times usually required in system development. The Series 7000 can be used to scan any process variable that is reducible to electrical form at speeds ranging from those of typewriter readout devices to speeds of present available magnetic tape recording units. Systems with accuracies to 0.01% are available. Electrical inputs from primary instruments such as thermocouples, resistance temperature detectors, flowmeters, pneumatic instruments, or other transducers can be scanned and converted into digital form for readout in any format desired. Computing functions, self-check and self-repair features are available. Since M.S.I. Series 7000 Alarm Scanning and Recording Systems provide true digital comparison of set points against variable, the highest possible alarm scanning reliability is assured, reports the company.

(Request Item No. H-12)

New Shrink-Proofing And Crease-Proofing Agent

A new highly reactive material derived from acrolein is now being offered in product development quantities by the industrial chemicals division of Shell Chemical Co., New York City. Called Aldocryl Resin X-12, the material is said to have a number of promising applications for making better cotton and rayon fabrics.

The new product is described as useful in the shrink-proofing of rayon and the crease-proofing of cotton. Because it is a non-nitrogenous material, treating cotton and rayon fabrics with it strengthens them against the effects of laundry bleaches.

The material has a low molecular weight, is essentially colorless and remains stable in storage. Completely water soluble, it is furnished as a 50% aqueous solution.

(Request Item No. H-13)

Sleeve For Fluorescent Tubes Screens Ultraviolet Rays

Infropake Corp. of America, Greensboro, N. C., has developed a new lighting product, the Infropake Filtersleeve, intended for any high intensity fluorescent lighting installation where eye strain, color discrimination, fabric fad-

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ing, or synthetic fiber degradation are problems. Alleviation of these difficulties is said to be achieved by a specially impregnated plastic film which filters the ultraviolet energy transmission. Filter-sleeves are available in all sizes and are reusable. The clear plastic film passes 90% of the visible light, but filters out the ultraviolet emissions, and is said to thereby eliminate the fading, degradation and deterioration of fabrics which are caused by ultraviolet light. This is also said to result in better color discrimination, a marked reduction in glare specular reflections, and a more comfortable diffused light.

(Request Item No. H-14)

Tension Recorder Reduced

Custom Scientific Instruments, Kearny, N. J., has announced the reduction in size and cost of its Tension Recordograph. The unit utilizes Sanborn's portable single channel recorder and a transducer sensing head with a range of 0 to 800 gms. The company used transistors to reduce the size of the unit. In the cover of the recorder is mounted the capacitance system and holders for the Sensing Head and lead in cable. The unit is designed to measure the amount of tension applied in spinning, winding, warping and other processing.

(Request Item No. H-15)

Acid-Peroxide Process For Bleaching Cotton

Becco Chemical Division of FMC Corp., New York City, has announced the availability of a new acid-peroxide process for bleaching cotton piece goods which is said to give excellent color brightness.

The bleaching solution is a mildly acid hydrogen peroxide composition which is not corrosive to any stainless steel processing equipment at any temperature customarily used in bleaching operations. Moreover, the new process does not use any chemicals that are hard to wash from the cloth or form scale-deposits on the equipment, Becco reports. It thus provides an excellent method for bleaching any fabrics earmarked for dyeing. The chances of catalytic damage to the fabrics are also said to be greatly minimized with the new process.

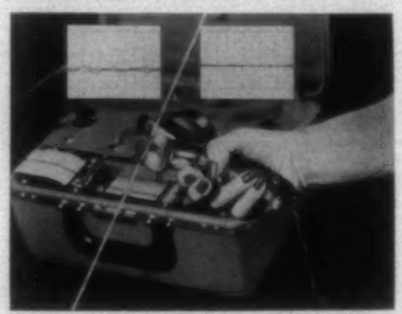
The new acid-peroxide bleaching process was developed primarily for bleaching colored yarn materials composed of cotton and other cellulosic fibers, or blends of cellulosic and synthetic fibers. Naphthol reds and blacks as well as certain vat-dyes that are sensitive to bleaching can now be bleached by this new process without any mark-off or change in color tone, the company reports. Thus, the extra handling that is usually required to clean up bleeding and mark-off effects from colored yarn patterns is said to be avoided. Furthermore, the colors attain their full brightness.

The new process is said to be very suitable for use on multi-colored fabrics, ginghams, striped sheets, toweling with colored borders, and similar products. Cotton cloth bleached in commercial J-box equipment with the new Becco acid-peroxide bleaching process is said to have shown excellent physical characteristics.

The new process can be carried out in existing J-box equipment with only minor changes or none at all and can also be carried out in jigs or dye-becks.

(Request Item No. H-16)

Electronic Tension Recorder



A new electronic tension recorder designed to show and record tension and its changes during spinning, twisting and other yarn processes has been introduced by Tensitron Inc., Harvard, Mass.

The new unit is designed to record quickly changing tensions. Since it is not the average tension, but the sudden peaks that damage yarn, a quick electric response is needed to show such surges. Steps can then be taken to engineer first and standardize tensions thereafter.

The new tension recorder is said to make possible for the first time, objective tension measurements during yarn spinning without breaking the roving, by using a micrometer fine-adjustment for the sensing unit. A magnetic base fastens the transducer to the frame.

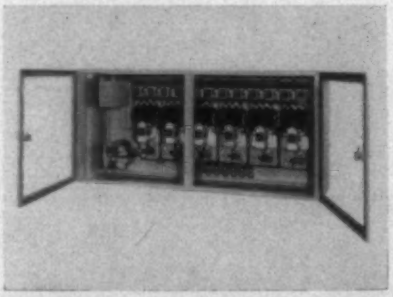
Different tensioning devices, auxiliary oils, belt slippage, weight of traveler, speed of traverse, r.p.m., the difference between sintered and steel rings, and other factors that influence tension from yarn ballooning to worn parts can be demonstrated objectively with the unit.

Tensitron's new device registers tension changes not only during the traverse, but proves also the long-time tension variations when the yarn builds up on a bobbin, pirn or package, or is pulled off same. Tension variations during milliseconds are resolved and changes shown between different methods of twisting, spinning and winding.

The recorder operates at two speeds: at 5 and at 50 millimeters/sec. Thousandths-of-a-second registration is indicated by separate time-markings (above the tension graph).

(Request Item No. H-17)

New Braking Control



A multiple-motor DynAC braking control for cloth inspection frames, looms and spinning frames is being offered by Westinghouse Electric Corp., Pittsburgh, Pa.

The control, available in ratings up to 100 h.p., 220 volts and 200 h.p., 440 volts, combines all starting and electrical braking functions of several motors within one enclosure and provides a complete d.c. electrical braking package for a.c. motors. Features of the design include its use in a packaged wall-mounted cabinet for easy installation and less maintenance; reduced initial costs since a common d.c. power supply is used for braking of all the motors involved.

(Request Item No. H-18)

American Bemberg Adds 70-Denier To Tusson Line

American Bemberg, New York City, has added 70-denier yarn to its Tusson line. The new Tusson denier has been especially designed for fabric blends with fine yarn types, for use in textured dress and blouse fabrics.

The outstanding characteristic of the new Tusson yarn is said to be its exceptional compatibility with fine yarns both in performance through weaving and finishing operations and in final appearance.

(Request Item No. H-19)

Non-Woven Binder

A new synthetic medium nitrile rubber latex especially tailored for use in textiles and nonwoven fabrics has been introduced by the chemical division of Goodyear Tire & Rubber Co., Akron, Ohio.

Known as Chemigum 520, the new material will be produced in the division's Akron facilities. Improved binder materials such as Chemigum 520 are broadening nonwoven markets, according to the company. Such latices are said to make it possible to design individual fabrics for specific end uses.

(Request Item No. H-20)

Wash-And-Wear Resin

Onyx Chemical Corp., Jersey City, N. J., has announced the development of

NON-FLUID OIL
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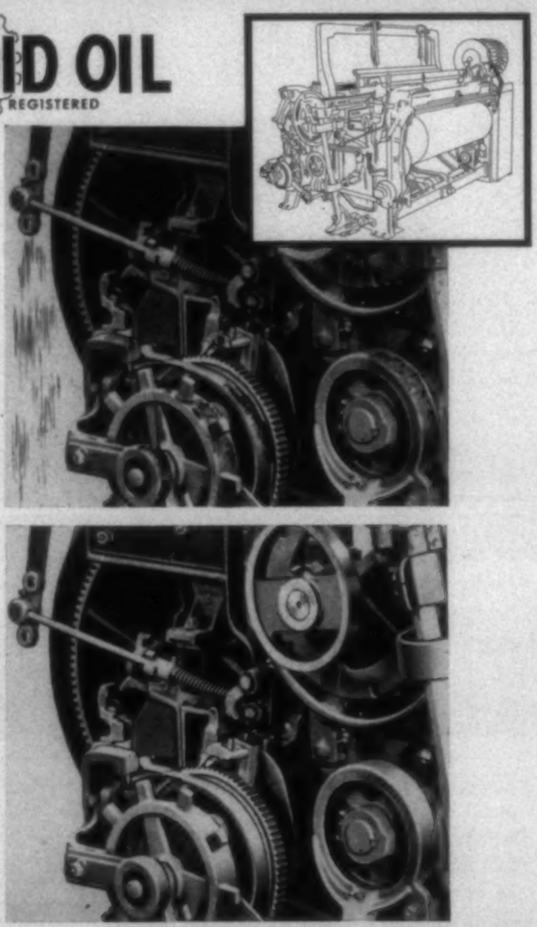

Ordinary oils drip out

NON-FLUID OIL stays in

More and more mills are installing shuttle-less looms equipped with automatic lubrication systems. We have kept in step with this trend by designing specific grades of NON-FLUID OIL for such systems. Being in constant touch with loom manufacturers, we always have a grade of NON-FLUID OIL ready to serve, no matter what changes they make in their machinery.

On all types of looms, NON-FLUID OIL assures maximum output of perfect goods. Ordinary oils spatter and leak, getting on warps and woven goods. This means higher "seconds," higher lubrication cost and highest application cost. By staying in bearings and lubricating until entirely consumed, NON-FLUID OIL prevents these losses.

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FOR THE TEXTILE INDUSTRY'S USE—

Onyxset LC, a new cyclic reactant resin designed to provide wash-and-wear finishes for cottons. Fabrics finished with Onyxset LC are said to have greater shrinkage control, greater scorch resistance and lower residual odor than those processed with triazone resins.

Onyxset LC is described as a clear, colorless liquid, easily soluble, and with unlimited storage stability. Some 10-15% of the product, as supplied, is sufficient to treat most cotton fabrics properly.

(Request Item No. H-21)

Lubricating Spray

Rulon spray, a reinforced fluorocarbon slip and anti-stick agent, is now being offered in a new king-size 16 oz. aerosol spray can for quantity users, according to the manufacturer, Dixon Corp. of Bristol, R. I. The spray is said to be similar in function to Dixon's basic line of molded, extruded and machined Rulon materials, providing a low-friction, dry surface which is chemically inert, insoluble, and thermally stable to 500° F.

Rulon spray is designed to provide a low-friction, slick surface for wood, metal, leather, plastics, etc. It leaves a dry, non-gummy film that will not collect dust. It has a coefficient of friction as low as .07 and is said to eliminate "stick-slip" at low speeds. It is described as ideal as a lubricant for belts, gaskets, packings, gears, bearings, cord, cable, machine parts, conveyors and as an anti-stick agent for blenders, tanks, chutes, conveyors, dry cans, etc.

(Request Item No. H-22)

Retarding, Leveling Agent For Dyeing Wool And Blends

Levelol 74, a retarding and leveling agent designed to produce level dyeings on wool and wool blends, has been introduced by Onyx Chemical Corp., Jersey City, N. J. The new agent is said to be suitable for all types of chrome dyeings. It is instantly soluble in the dye bath, Onyx reports, and increases the color value of dyestuffs by exhausting the dye to give fuller brighter shades.

In addition, Levelol 74 is said to improve light fastness and fulling properties of chrome dyed wool and wool blend raw stock. Other advantages cited include: permits use of acid milling dyes with strong acids; prevents side-to-side shading on wool and wool blend piece goods; and improves wet fastness of acid dyestuffs.

The new agent is applied as a pretreatment of the goods before the addition of the dyes.

(Request Item No. H-23)

Eastman Develops Textured Filaments For Carpeting

Production of a textured continuous filament modacrylic fiber for carpeting—textured continuous filament Verel—is underway at Eastman Chemical Products Inc., Kingsport, Tenn., wholly-owned marketing subsidiary of Eastman Kodak Co.

Textured continuous filament Verel yarn is being offered initially in 2700 denier. Evaluation studies are under way with several carpet manufacturers.

The new Verel carpet yarn is in production in both natural and soution-dyed form. Solution-dyed colors include light beige, rose beige, brown, green and black.

The yarn on parallel tubes is priced at $1 per pound for natural and $1.20 per pound for solution-dyed colors.

Qualities of the new type Verel yarn are said to include excellent bulk and cover, exceptional clarity and fastness of color, and outstanding wear and general performance. Verel is also highly flame resistant, non-allergenic and has high resistance to moths and mildew.

The textured continuous filament Verel is expected to have its greatest application in loop pile carpeting in tweed types and muted tone-on-tone effects.

(Request Item No. H-24)

For the Mill Bookshelf

Wrench And Tool Catalog

A new 128-page catalog is available from Snap-on Tools Corp., Kenosha, Wisc., describing in detail complete lines of wrenches and hand tools for production assembly, maintenance work and product service.

The catalog also describes tools such as manual and hydraulic gear pullers, electric drills, sanders, grinders, etc., and electronic and electrical instruments.

(Request Item No. H-25)

Centralized Lubrication

Catalog 82, illustrating and describing its line of centralized lubrication equipment, has been published by Lincoln Engineering Co., St. Louis, Mo., division of The McNeil Machine & Engineering Co.

Featured in the 32-page catalog is Lincoln's complete line of lubricant application equipment with descriptions of fully automatic, semi-automatic and manual methods of operation.

High and low pressure lubricant injectors, timing and alarm controls and filler pumps are described along with several pages of installation accessories such as tees, hose, flexible feed lines, coupling studs, etc.

(Request Item No. H-26)

Scientific Instruments

The complete line of scientific instruments, apparatus and equipment, manufactured by Labline Inc., Chicago, Ill., and its subsidiaries, is described in a new illustrated catalog available to all scientific and purchasing department personnel.

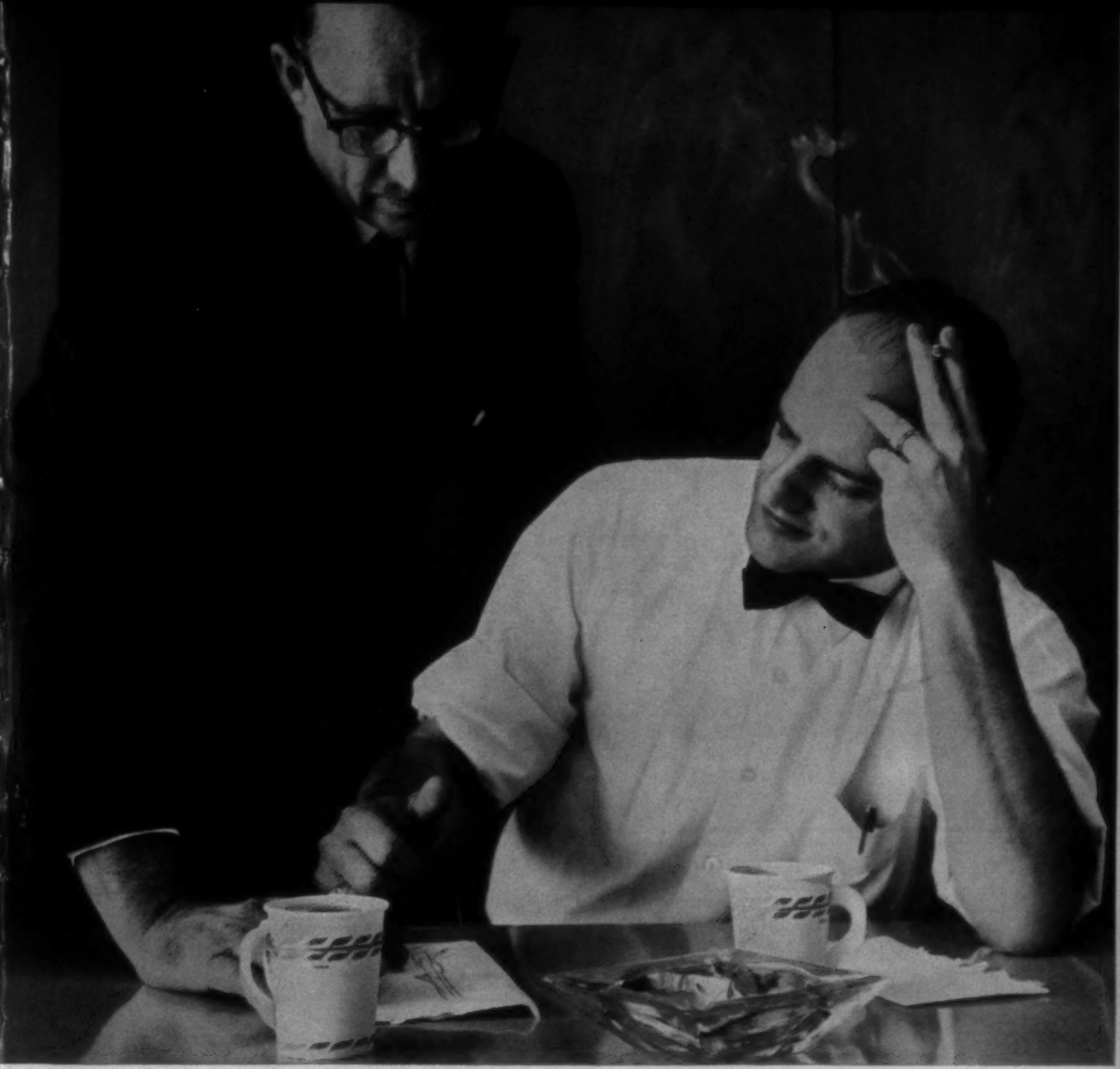
The 200-page catalog includes instruments for chemical, research, physical testing and industrial control laboratories.

Over 450 laboratory items, including furniture, are described.

(Request Item No. H-27)

Chain Drive Selection

A new bulletin designed to provide easy-to-follow chain drive selection procedures for its Rex stock industrial chain lines has been published by Chain Belt Co., Milwaukee, Wisc. The 12-page bulletin, No. 611P, includes new



How a coffee break saved 3 hours per frame per year!

It happened one morning about a year ago during coffee break at our Research and Development Center at Clemson. ■ One of our engineers from the Development staff was describing a problem he had run into with a small part on the pilot model of the new Rovematic frame. It didn't have the durability he wanted. A Research Department engineer had a sudden inspiration. He thought of a way to relocate the part so that it would not be subject to as much stress, and consequently should last a lot longer. Coffee momentarily forgotten, the two worked it out, and the change was made. ■ The result is that three hours per year — the down-time that might have been required for the replacement of that particular part — have been eliminated on every single Saco-Lowell Rovematic frame. ■ A lucky accident? Not at all. It expresses our whole philosophy in building our Research and Development Center. Its purpose: to stimulate interaction of skilled and dedicated specialists in an academic atmosphere. No matter what the problem our engineers are tackling, they can turn to other fresh minds for new opinions, new approaches to making better textile machinery and providing better textile service. For, at Saco-Lowell, all our products are **built for better performance . . . backed by better service.**

SACO-LOWELL SHOPS

TEXTILE MACHINERY DIVISION

EXECUTIVE & SALES OFFICES — GREENVILLE, S. C.
BRANCH SALES OFFICES—ATLANTA, GA., CHARLOTTE AND
GREENSBORO, N. C., GREENVILLE, S. C., AND SACO, MAINE

A.R.S.C.M. horsepower ratings for both A.S.A. Rex Roller and Chabelco Steel Chains.

Data in the bulletin's seven selection tables is arranged to provide quick determination of chain sizes, sprocket sizes, center distances, chain lengths, and the ranges of both A.S.A. roller chain stock sprockets and Chabelco sprockets. A listing of complete stock drive equipment is also included.

(Request Item No. H-28)

Moisture Tester

A newly developed Commodity Moisture Tester, designed as a self-contained apparatus for use in measuring the moisture in fibers is described in a new bulletin from the United States Testing Co.'s instrument and apparatus division, Hoboken, N. J.

The unit can be used in both production and laboratory applications. It is designed to perform a complete determination in less than 30 seconds. A five-inch sample chamber reduces the number of tests required to get representative moisture values, according to the company. With lint and seed cotton the instrument determines moisture within a tolerance of ± one point as compared with standard oven methods.

The sample to be tested need not be weighed for the unit. It is simply placed in the test chamber and the top plunger released. Pressure is applied by the operator with three or four quick manipulations of the hydraulic pump. The dial reading is converted to percent moisture with a chart provided with the instrument.

The unit is battery operated and incorporates transistorized circuits to insure long battery life.

(Request Item No. H-29)

Mechanical Power Transmission Equipment

An 8-page, letterhead size bulletin titled "Mechanical Power Transmission Equipment," from T. B. Wood's Sons Co., Chambersburg, Pa., is a condensed catalog of many products and an index to the company's trade literature. Each product or product line description is concluded with reference to a separate bulletin for detailed information, drive selection tables, etc. The catalog covers briefly V-belt, ultra-V and F.H.P. drives, timing-belt drives, flat belt pulleys, variable-speed drives, cotton card and cotton cleaner drives, motor bases, flexible couplings, bushings, bearings, pillow blocks and related equipment.

(Request Item No. H-30)

Syphon, Sight-Flow Indicators

Ross Midwest Fulton Division of the Midland-Ross Corp., Dayton, Ohio, is making available a 4-page brochure describing the Auto-Flex syphon and Ball Sight-Flow indicators for textile mill dryers.

The bulletin, RMF-601, describes the savings obtained with auto-flex syphons, through complete removal of water and air from the dryers. It also describes the ball sight-flow indicator which is designed to enable quick and accurate temperature readings and flow checks.

(Request Item No. H-31)

G. E. Motor Controls

General Electric, Schenectady, N. Y., has published an 8-page bulletin, GEA-7326, describing its N.E.M.A. size 3 and 4 magnetic contactors and starters. The units are part of the company's 100-line of motor controls. Pictures and diagrams show space savings made possible by the use of the new forms. Also pictured are the space saving features of the entire 100-line from size 00 to size 4 starters and contactors.

(Request Item No. H-32)

Air Compressors

A 16-page catalog covering its complete line of air compressors has been published by Lincoln Engineering Co., St. Louis, Mo., division of The McNeil Machine & Engineering Co.

Included in Catalog 20 is data on more than 200 models—both gasoline and electric driven—featuring automatic start-and-stop and constant-running units, plus illustrations and descriptions of compressors available with either horizontal or vertical tanks. Also shown is a cross-sectional view of the basic Lincoln compressor and loadless starting device.

(Request Item No. H-33)

Chemical Catalog

A comprehensive list of its products is being made available by Air Reduction Chemical & Carbide Co., division of Air Reduction Co. Inc., New York City.

The 8-page bulletin gives information on a large group of products, ranging from calcium carbide and pipeline acetylene to organic compounds and special-purpose resins. It is titled "Airco —Organic Chemicals and Colton Polymers."

Also available are two abbreviated versions of the Airco bulletin, covering the product lines of two of the company's chemical marketing departments. A 6-page bulletin entitled "Colton Polymers" lists the physical properties and applications of the products marketed by the Colton polymers department. Among the products included in the bulletin are Vinol polyvinyl alcohols, Flexbond copolymers, Vinac polyvinyl acetates, Flexac polyvinyl acetates, and Aircoflex dibutyl phthalate.

"Airco Organic Chemicals" is a 4-page bulletin covering Airco vinyl monomers, acetylenic alcohols and glycols, alkyl acetylenes and Surfynol surface active agents. These products are marketed by the organic chemicals department of Air Reduction.

(Request Item No. H-34)

Engineering Service

A new 12-page, two-color brochure published by The Elwell-Parker Electric Co., Cleveland, Ohio, describes its special engineering service which is designed to help cut costs for industrial truck users.

The brochure shows examples of production problems solved by special mechanical handling equipment recommended through the Special Engineering Service and developed by Elpar. The examples, which range from minor modifications to standard electric-powered trucks to complete specially designed trucks, are drawn from the textile and other industries. The problem, solution and photograph of the machine in action are presented for each of the cases.

(Request Item No. H-35)

Tools, Sealers, Accessories For Avistrap Cord Strapping

New tools, sealers and accessories available for use with Avistrap rayon cord strapping are described in a 4-page, 2-color illustrated brochure recently prepared by the industrial packaging department of American Viscose Corp., Philadelphia, Pa.

The brochure illustrates various applications and describes the major advantages of Avistrap.

Charts giving types, widths and lengths of available rayon strapping, and also comparing Avistrap with the strengths of metal strapping, are included in the publication. Full description is given of seals, new manual tensioners, the two new Avistrap pneumatic tensioners, and the five improved sealers; all are illustrated.

Accessories, including Avistrap dispensers and polyethylene corner protectors, are described and illustrated. Strapping type numbers and tool numbers are provided for all items.

(Request Item No. H-36)

Dyeing Of Blends Of Dacron/Cellulosic Fibers

The Du Pont Co., Wilmington, Del., has published a 20-page booklet providing technical information on the dyeing and finishing of Dacron polyester staple blended with cellulosic fibers.

Included in the publication is information on desizing, scouring, mercerization, drying and heat-setting and dyeing. Various finishing processes are covered including singeing, bleaching, optical whiteners, compressive shrinking, stripping, chemical finishes and mechanical finishes.

Two pages of typical procedures with a time-temperature chart for each are included. An appendix gives sources for auxiliaries used in the finishing of blends of Dacron staple with cellulosic fibers.

(Request Item No. H-37)

Controlled Speed System

A revised brochure on "Controlled Speed Systems" has been released by U. S. Electrical Motors Inc., Los Angeles, Calif., and Milford, Conn.

The brochure incorporates the advances made in central control instrumentation and panel design, and in signal transmission methods within process-controlled automatic systems. A number of these systems have been revised to utilize the electric U. S. Varitrol motor speed control in applications where pneumatic air pressures may not be available or may not be desirable. By supplying both electrical and pneumatic Varitrol systems, U. S. Motors reports that it can assure the availability of the correct speed control actuation for each application.

Included in the 12 typical systems that are illustrated in 3-dimensional schematic drawings are five U. S. Varidyne a.c. frequency-control multi-motor systems, as well as single-motor systems utilizing U. S. Varidrives and Torque Motors. Also featured is the U. S. Dial-A-Torq control designed to provide adjustable motor slip on a calibrated basis.

(Request Item No. H-38)

Textile Belting Brochure

More than 50 illustrations of increased textile mill efficiency through the use of its power transmission belting are highlighted in a new 12-page special textile industry brochure released by Extremultus Inc., Englewood, N. J.

Demonstrating improved belting applications ranging from opening and picking through carding, combing, spinning or twisting, weaving and finishing, the new publication pictorially illustrates the cost and time savings said to result from the use of this belting.

Extremultus belting is designed to prevent slippage and stretch, with consequent costly belt take-ups. It has a friction surface of specially chrome-tanned leather, bonded to a flexible, oriented nylon-type polymer core. By combining the strength and elasticity of

Keep Cloth Rolls Straight with Star-Grip* Tubes

These Star Tubes give your cloth rolls a straight smooth start, without tape and without overlapping. They prevent wrinkling and keep rolls and patterns straight and even throughout. "Star-Grip" Tubes save valuable time, too.

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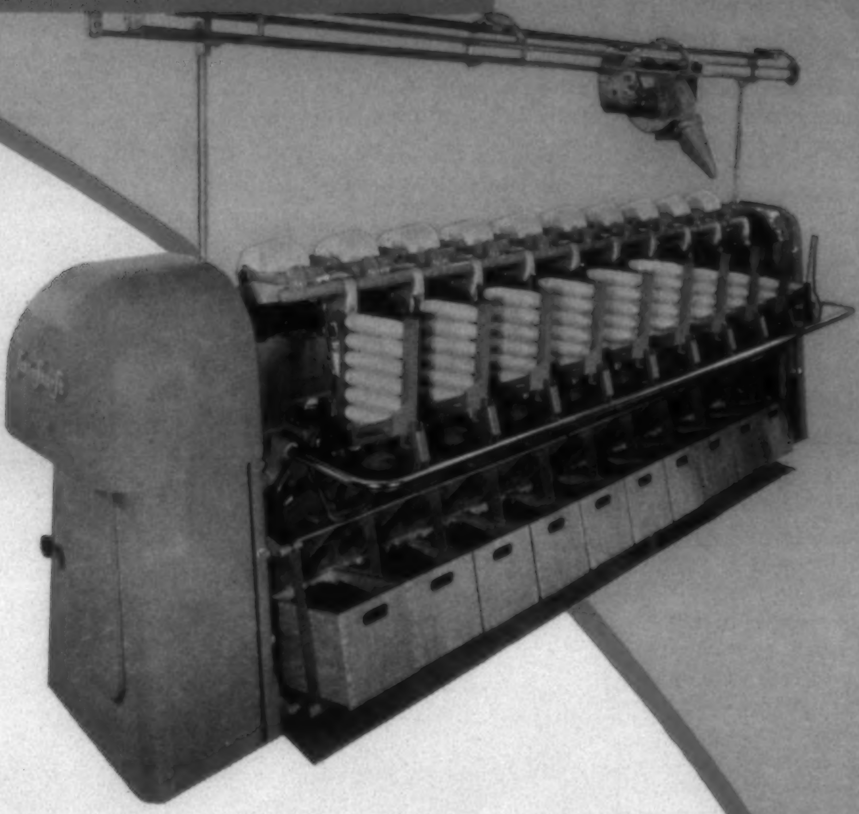

Schlafhorst **AUTOCONER**

The tremendous potential of this new, high speed, automatic and fully versatile cone and cheese winder is being reflected in this record:

OVER 40,000 SPINDLES

have been sold to textile plants in Europe, the United States and Canada. Why?

Lower winding cost

Larger and better packages

Full flexibility

High machine efficiency

Simplified operation

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THE TERRELL MACHINE CO., INC.

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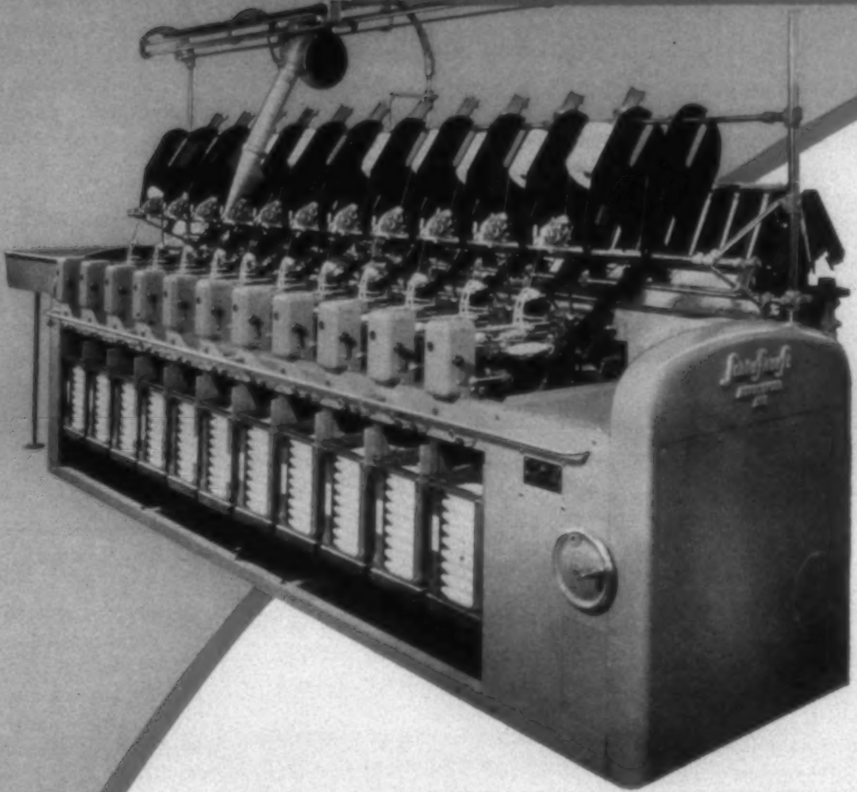

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INSTALLATIONS FIRST HALF 1961

completed, under erection or on order:

- Aileen Mills
- Avondale Mills
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- Cone Mills, Eno Plant
- Cone Mills, Minneola Plant
- Cone Mills, Pineville Plant
- Cone Mills, Revolution Plant
- Cone Mills, Tabardrey Plant
- Deering Millikin Co., Inc.
- Dominion Textiles, Ltd.
- Eagle & Phenix Mills
- Indian Head Mills
- Joanna Cotton Mills
- John P. King Mfg. Co.
- M & F Worsted Mills
- Muscogee Mfg. Company
- Pepperell Mfg. Co., Dunson Div.
- Russell Mfg. Company
- Schwarzenbach Huber Co.
- Spartan Mills
- J. P. Stevens & Co., Inc.
- Wabasso Cotton Company
- West Point Mfg. Dixie Mills
- West Point Mfg. Co., Riverdale Mill

AUTOCOPSERS are now furnishing filling for over

20,000 LOOMS IN 80 MILLS

in just the United States and Canada.

Sold and Serviced by

THE TERRELL MACHINE CO., INC.

P. O. BOX 928, CHARLOTTE, NORTH CAROLINA

the polymer core with a leather having a higher coefficient of friction, Extremultus reports that it has been able to provide the textile industry with a transmission belt giving vastly improved performance over conventional belting.

(Request Item No. H-39)

Checkweigher Information

The complete line of automatic inline checkweighers by Toledo Scale Corp., Toledo, Ohio, is fully illustrated in a new 8-page booklet.

This new literature includes material on the accuracy, checkweighing speed and weight ranges of each Toledo Checkweigher model—as well as pertinent construction data. Various industrial applications of these checkweighers are illustrated with installation photographs.

This booklet explains Toledo checkweigher accuracy in terms of "zone-edge tolerance," which is a positive means of expressing checkweighing accuracy. That is, the consistency with which a machine chooses between adjacent weight zones when the package weight falls in the break-even area between weight zones. The narrower this area is, expressed in fractional ounces, the greater the checkweigher accuracy and reliability throughout a given machine's weight range.

(Request Item No. H-40)

Care Of Teflon-Coated Equipment Described

The General Plastics Corp., Bloomfield, N. J., has published a new brochure describing the care and installation of Teflon-coated equipment. According to General Plastics, a brochure of this type has been requested and needed for many years.

(Request Item No. H-41)

Self-Crosslinking Resin

A technical brochure describing the recently introduced self-reacting crosslinking resin latex, X-Link 2833, is available from the resin division of National Starch & Chemical Corp., New York City.

The 6-page brochure is designed to give prospective industrial users general information and data on properties, formulation, and applications of this new vinyl-acrylic copolymer dispersion, which is said to be capable of crosslinking without the addition of thermosetting resins.

Outstanding properties of X-Link 2833 in film strength and resistance to water, creep and solvents are described, and formulation data on pigmentation and thickeners are given.

The brochure covers a number of application areas where use of the self-crosslinking latex shows promise including nonwoven fabrics and textile finishes. Typical latex and film properties of X-Link 2833 are also listed.

(Request Item No. H-42)

Telemetering Systems

A new 4-page brochure, "New General Electric Digital Telemeter System—Bulletin GEZ-3312," has been released by the General Electric Co., Schenectady, N. Y. The publication describes the fast 100% accurate telemetering of KWHR readings from remote locations to central load dispatch office. In addition the bulletin relates operating features of digital telemetering systems with descriptive schematics, system specifications and available accessories.

(Request Item No. H-43)

Making Repair Parts

A new 16-page picture booklet, designed to aid those who must make maintenance and repair parts, has been made available by La Salle Steel Co., Hammond, Ind.

The booklet, entitled "One Way to Make Your Job A Little Easier," offers solutions for those persons faced with the problem of getting machinery repaired and back into production fast—and at minimum cost.

Presented in photo-caption format, the booklet offers ideas on how to save time in machining parts, eliminate heat treating, quench cracks and last minute parts rejections. It also offers suggestions for avoiding secondary operations such as cleaning, straightening, finish grinding and inspections.

Included in the booklet are physical properties, chemistry and tolerances for Stressproof steel bars, widely used in both production and maintenance and parts applications.

(Request Item No. H-44)

Cost Control

The Cost-Minded Manager by John D. Staley is a new volume from the American Management Association which is concerned with what cost control is and is not. Cost control is not, the author points out, arbitrary penny-pinching, crash programs or short-term enthusiasms. It is not an emergency device to combat recessions or sudden foreign competition.

Cost control, according to Mr. Staley, is an integral part of sound management. It exists in every company that is well-managed, regardless of sudden shifts in the market or the labor force. Continuous attention to costs, he points out, is a key element of every executive's job.

After analyzing the basic concepts of cost control and showing how to get real co-operation throughout an organization for a cost reduction program, the author discusses the human factors involved. These include the role of the supervisor, motivation, rewards and incentives. He then goes on to show specific ways of controlling labor and maintenance costs, how work simplification and methods improvement can produce savings, and how cost data are collected, analyzed and acted upon.

This new volume is available from the American Management Association, 1515 Broadway, New York 36, N. Y., for $6.75 ($4.50 to association members).

Personnel Selection

A new brochure describing methods of minimizing errors in personnel selection and executive promotion through psychological testing has been introduced by The Sales Aptitude Testing Corp., New York City.

The brochure is designed to offer some facts and opinions on employee evaluation with conclusions drawn from the aptitude testing of engineers, executives, supervisors and salesmen.

For a free copy, write on company letterhead to The Sales Aptitude Testing Corp., 315 Fifth Avenue, New York 16, N. Y.

Government Statistics Guide

Guide To U. S. Government Statistics by John L. Andriot is a 400-page volume designed to serve as a compact, yet comprehensive guide to U. S. Government statistical data. The book covers over 2,000 items, including the recurring publications, the statistical series, and many important one-time publications of statistical value. The publication is available from Documents Index, Box 453, Arlington 10, Va., for $15 per copy.

treasure trove!

Celanese unearths a fabulous museumful of historic fabric designs to inspire magnificent new decorative fabrics for Celanese 1962 home furnishings promotion. From the archives of the Musée De L'Impression Sur Étoffes in Mulhouse, France, come fabrics dating from the time of Marie Antoinette. This collection, the largest of its kind in the world, has been preserved over the centuries, hidden away in the French countryside during the war, reassembled now in the Museum, and brought to light at last by Celanese. The collection includes carefully authenticated documents, historic commemorative fabrics, rare tapestry designs and thousands more—all as yet untouched for commercial use. Celanese has been privileged to take exclusive photographs of these treasures and will make them available to converters for translation into fabrics with Celanese Contemporary Fibers. And we will back these fabrics in '62 with every promotional resource at our command. This promotion is of immediate importance to you. Be sure you're planning a wide range of fabrics with Celanese fibers. There'll be a tremendous demand. And call on our representatives at any time to work with you on new weaves and constructions. Celanese Fibers Company, 522 Fifth Avenue, New York 36 (a division of Celanese Corporation of America). Celanese®

Celanese

Serving The Textile Industry

Penick & Ford Plans Merger With Morningstar-Paisley

The merger of Penick & Ford Ltd. and Morningstar-Paisley Inc., both of New York City, has been approved by the boards of directors of the two firms. Under the terms of the proposed plan, the common stock holders of Morningstar-Paisley would receive .385 share of Penick & Ford common stock for each share of Morningstar-Paisley. The plan is subject to the approval of the stockholders of Morningstar-Paisley. Upon consumation, Morningstar-Paisley will operate in its fields as a division of Penick & Ford under its existing management.

Du Pont Earnings Expected To Drop In Second Quarter

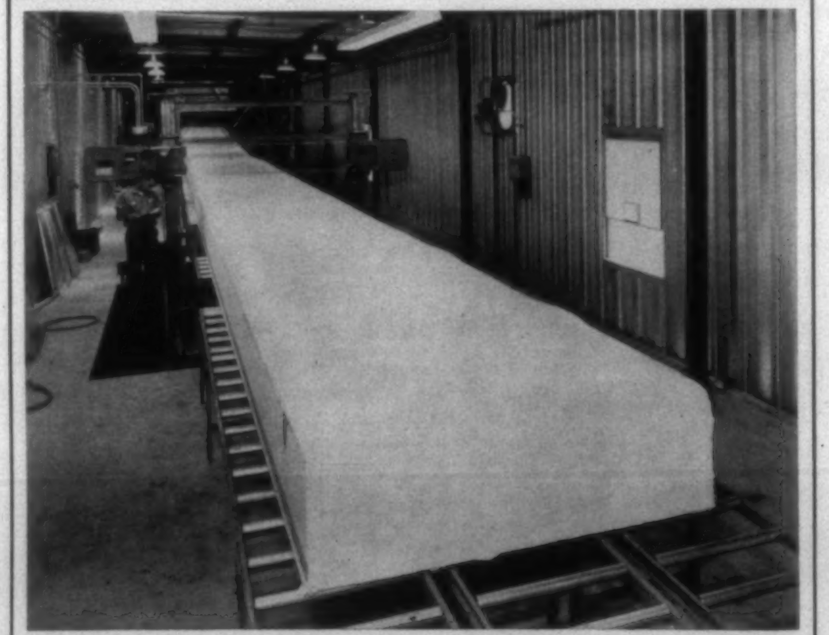
Earnings of the Du Pont Co., Wilmington, Del., are expected to drop from 5 to 6% in the second quarter of '61, according to the company. However, a rise in earnings is forecast for the second half of the year. This rise is expected to lift sales for the 12 months over those for the previous year but will result in a small lag in profits.

For the first half, earnings are expected to be about 9% below the first half for last year of $202.9 million. This includes dividends from General Motors stock which the Supreme Court has ordered the company to sell. About 17% of Du Pont's profit in 1960 was from the General Motors stock.

Corn Products Acquires Nemo Jet Cooker Patent

Corn Products Sales Co., New York City, has acquired patent rights to the Nemo Jet Continuous Cooker, according to H. Plimpton, executive vice-president of Corn Products' industrial division. Norman Elsas of Nemo Industries Inc., Atlanta, Ga., originator of the continuous starch cooker, will be associated with Corn Products as a consultant.

Acquisition of the Nemo cooker by Corn Products, Plimpton pointed out, was preceded by a long period of cooperation between the two companies, during which a number of modifications to the basic design of the cooker were developed.



THIS URETHANE FOAM SLAB is being cut into long buns by a traveling cut-off saw at the new foam producing facility of Nopco Chemical Co.'s plastics division in Chattanooga, Tenn. The new 70,000-foot plant will turn out more than four million pounds of foam annually for the textile and other industries. It marks the first new facility afield from the plastics division's headquarters operation in North Arlington, N. J.

Anderson, Clayton Moves Atlanta Sales Office

Anderson, Clayton & Co., cotton merchants, is closing its Atlanta, Ga., office and opening a new sales office in Thomaston, Ga. Salesmen for the Southern territory will be relocated in Thomaston. The company announced that it was making the change in order to have its office nearer the center of the territory it serves. Hudson Johnson has been named manager of the Thomaston office. The company will have its offices in the Bank of Upson Building.

Leesona Announces Delay In Filling Of Uniconer Orders

Leesona Corp., Providence, R. I., has notified textile mills which have placed firm orders for the company's new Uniconer automatic coning machine that shipments, originally scheduled to begin in the final quarter of this year, will be postponed by approximately nine months, according to Robert Leeson.

"Even though tooling is about 90% complete and raw materials are in inventory for manufacturing," Leeson said, "new designs for certain machine components conceived recently by the research division are performing so well under laboratory testing that a delay of production seems wise so that initial Uniconer machines produced will incorporate the added benefits expected.

"Components of new design are now being fabricated and are soon to be installed on the prototype Uniconers which have been undergoing mill testing," Leeson said. "A period of critical study and exhaustive operating tests under mill conditions on a broad variety of yarns will follow."

Putnam Chemical Moves Headquarters To Charlotte

Putnam Chemical Corp. of Beacon, N. Y., is moving its headquarters to Charlotte, N. C., on completion of its new $750,000 office, laboratory and warehouse facility. The Beacon, N. Y., office will become a branch. The

"The boss said . . . always bring in the Dillard salesman!"

Dillard PAPER COMPANY

GREENSBORO • CHARLOTTE • RALEIGH • WILMINGTON • WINSTON-SALEM • ATLANTA • MACON • AUGUSTA
GREENVILLE • COLUMBIA • SPARTANBURG • ROANOKE • BRISTOL • RICHMOND • KNOXVILLE • BIRMINGHAM

1926 "IF IT'S PAPER" 1961

chemical and dyestuffs firm is now in the process of moving 15 families to Charlotte. Before the end of the year Putnam expects to reduce its 80 employees at Beacon to 30 with the other 50 going to the new facility. The move is being made in order to put the company's headquarters near its biggest customers.

Courtaulds Reports Profit Drop For Latest Fiscal Year

Courtaulds Ltd., of London, reports a drop in net profit for the fiscal year ended March 31. Profit for the year totalled $20.3 million as compared with $33.2 million in the previous fiscal year. U. S. and Canadian subsidiaries of the company are said to have suffered severely as a result of intense price cutting.

Sir John Hanbury-Williams, chairman of Courtaulds, said that "an unsatisfactory state of affairs continues in North America for Courtaulds." The company's profit drop resulted from the intense struggle which has developed in the tire cord market between nylon and rayon producers.

Maremont Sees Bright Future For Saco-Lowell

From a loss of $2 million on 1959 sales of $29 million, Saco-Lowell Shops rebounded to a $2.2 million profit in 1960 on sales of $42 million. The future looks even more promising.

Maremont

That's the substance of a report on Saco-Lowell given by Arnold H. Maremont July 7 before the New York Society of Security Analysts. Maremont is president of Maremont Corp., Chicago, majority stockholder in Saco-Lowell.

"Nearly 81% of the textile machinery in use today was produced prior to 1946," Maremont pointed out. "This means a substantial market for both new equipment and replacement parts."

Tax laws and foreign imports have prevented domestic mills from taking full advantage of latest developments in machinery and equipment, he explained to the group, but solutions to these problems would keep Saco-Lowell operating at top speed for many years.

"The overseas market," Maremont said, "has an even greater sales potential. We fully expect to double Saco-Lowell's overseas volume within the next five years."

Further brightening the Saco-Lowell growth potential is the company's increased activities in the ordnance and automotive fields. The firm was recently awarded a $7 million contract covering M-60 machine guns, and is hopeful of landing a $15 million contract for M-14 rifles.

With the acquisition of Saco-Lowell, Maremont Corp. became the nation's 500th largest company, according to the annual listing of *Fortune Magazine*. Maremont had a consolidated net income of $2.6 million on sales of $72.4 million in 1960.

First Half Sales Increase Reported By American Enka

American Enka Corp., Enka, N. C., reports sales of $48 million for the first 24 weeks of 1961, a 6% improvement over the $45 million registered for the same period last year.

Net income for the first 24 weeks was $1.8 million compared with $683,000 for the same period in 1960. These figures compare with earnings of $3,484,000 for the first 24 weeks of 1959, the company's best earnings year since 1955.

Philip B. Stull, board chairman and president, reported to stockholders that earnings thus far in 1961, while showing an improvement over 1960, are "still far from satisfactory." He said volume of rayon and nylon shipments for the second 12 weeks' period of 1961 was substantially ahead of the same period a year ago and also higher than the first 12 weeks of 1961. "Prices and profit margins, however, caused by the continuance of severe competitive conditions in the industry, have not yet returned to reasonable levels," Stull said.

Lindly & Co. Has Highest Earnings In Its History

Earnings of Lindly & Co., Mineola, L. I., N. Y., for the first four months of 1961, ended April 30, were the highest in the history of the company.

The designer and manufacturer of electronic and automation systems sold equipment in the amount of $187,000 during these four months. Net profit for these four months increased to 3.4% from last year's average of 2.5%.

"A projection of our sales of $187,000 for this period to the end of the year would result in another record annual volume of business well in excess of one-half million dollars," said Howard Lindemann, president. He said that the current rising economy would easily support this sales volume. The general business situation, particularly in the textile industry, is now on the upsweep, Lindemann reported.

Koppers Co. To Dedicate $9 Million Research Center

The Koppers Co., Pittsburgh, Pa., will dedicate a new $9 million research center at Monroeville, Pa., on August 28. The new facility will provide 350,000 square feet of space for the company's research department. Koppers is a diversified company which supplies chemicals and dyestuffs to the textile industry. Sales of its chemical and dyestuffs division totalled $15.6 million in 1960.

Chemical Products Corp. Constructing New Plant

Chemical Products Corp. has started construction of a new plant at Cartersville, Ga., for the manufacture of a line of sodium silicates. Initial production will include most of the commonly used solution grades, one anhydrous glass and sodium metasilicate pentahydrate. Completion of the plant is expected by October 1961 with full scale production following shortly thereafter.

The new plant is being built adjacent to the company's existing barium chemicals facility at Cartersville. It will be the first basic sodium silicate operation in the Southeast.

Hood Chemical To Merge With Texize Chemicals

Merger of Hood Chemical Co., Ardmore, Pa., with Texize Chemicals Inc. of Greenville, S. C., has been agreed to by directors of the two companies, according to a joint announcement by Texize president W. J. Greer and Hood president Jack H. Rosfeld.

Subject to approval by Hood stockholders, shares of common stock in the Texize firm will be issued to shareholders of the Hood firm. Under terms of the agreement, the board of the enlarged company will be increased from seven to ten members. Hood, which manufactures household cleaning and laundry products at plants in Medina, Ohio, Plainfield, N. J., Jacksonville, Fla., and Charlotte, N. C., had sales in 1960 of approximately $4.5 million.

Its market area includes the Northeastern, Middle Atlantic and Southeastern states.

Texize manufactures and distributes textile and industrial chemicals and commercial, industrial and household cleaning and laundry products from plants in Greenville, Palestine, Texas, and Tampa, Fla. Sales for 1960 exceeded $15 million.

Chemstrand Dedicates Decatur Technical Center

The Chemstrand Technical Center, a prime factor in The Chemstrand Corp.'s overall effort to maintain and improve its competitive position in the chemical fiber industry, was dedicated recently in Decatur, Ala.

The new technical center, which includes a total of eight buildings, houses Chemstrand's engineering department, its Acrilan acrylic fiber development facilities, its purchasing department, and its applications research and service department.

Functions of the center include the improvement of processes, the development of better fiber characteristics, the development of modifications which adapt Chemstrand fibers to a wider range of application to consumer goods, and the development of new products.

Largest group at the technical center is applications research, where textile engineers and technicians test and evaluate Chemstrand fibers on representative machinery used in the textile industry. Included are all types of spinning equipment, looms, knitting machines, a complete dyehouse, and a tire lab where tires are built from fabric up. The entire effort is designed to fulfill the realistic needs of the textile industry.

Sonoco Products Completes Million-Hour Safety Plan

Employees of the Sonoco Products Co., Hartsville, S. C., have successfully completed a safety campaign to work a million man-hours without a lost-time accident. The company's 1900 employees at the Hartsville plant have worked toward this goal since the last lost-time accident occurred March 4, 1961, according to E. P. Langston, safety co-ordinator.

This is the second safe million man-hours to be completed during the last 12 months. Employees of Sonoco will decide on how to distribute the prize money made available by the company. The idea of a "safety kitty" was started in 1953 as an effort to promote safety to all employees. A cash reserve is built up for each 250,000 safe man-hours worked.

Butterworth Co. Speeds Up Research And Development

H. W. Butterworth & Sons Co., Bethayres, Pa., has announced an accelerated program of research and development in the field of new machinery for the textile finishing industry.

Butterworth, a division of Van Norman Industries Inc., has indicated that its current research program includes new methods of dyeing, bleaching and washing woven fabrics and new plastic film ranges. The program also includes adapting foreign patents for use in the American market. During 1961-62, Butterworth plans to invest a total of $200,000 in research and development of new processes and equipment.

Chemstrand Reports Nylon Truck Tire Sales Set Record

In the continuing battle between nylon and rayon manufacturers for the tire cord market, Chemstrand Corp., New York City, reports that nylon's share of truck tire sales reached an all-time high in the first quarter of 1961.

Chemstrand figures indicate that more than 60% of all replacement truck and bus tires shipped during the first quarter of 1961 were made of nylon cord, the highest percentage recorded to date. During 1960, 55% of all truck and bus tires shipped for replacement were made of nylon.

In original equipment tires, another record high mark was set when more than 36% of all truck and bus tires shipped were made of nylon cord. The increased use of nylon in original equipment tires indicated a greater trend toward specification of nylon cord tires by fleet operators when they purchase new vehicles, it was pointed out.

U. S. Companies Receive British Lap System Patent

Livingston & Haven of Charleston, S. C., and Granite Machine Co. of Hickory, N. C., have received patent number 850,694 from the Comptroller-General of Patents of Great Britain, covering the Long lap control system which is already in wide use in this country.

The Long system, marketed in this country under U. S. Patent No. 2,871,519, uses air pressure to provide uniform pressure to each end of the lap pin, assuring uniform laps, and laps weighing as much as 92 pounds.

Livingston & Haven reports that the system can be installed on any type picker, and uses fewer moving parts than conventional systems. The Long system includes both counter and calender sections.

All foreign sales are being handled by and under contract with T. M. M. Ltd., of Oldham, England, and marketed by Platt Brothers (Sales) Ltd. Division.

Butterworth Named Sales Agent For Kleinewefers

H. W. Butterworth & Sons Co., Bethayres, Pa., has been appointed U. S. sales agent for textile finishing machinery manufactured by Joh. Kleinewefers & Sohne, Krefeld, Germany. Stanley Brooks, executive vice-president, announced that Butterworth will import the basic machines and add instrumentation and electrical drive equipment. The Butterworth service will be responsible for parts and maintenance.

Kleinewefers units include printing, calendering, mercerizing and embossing machines.

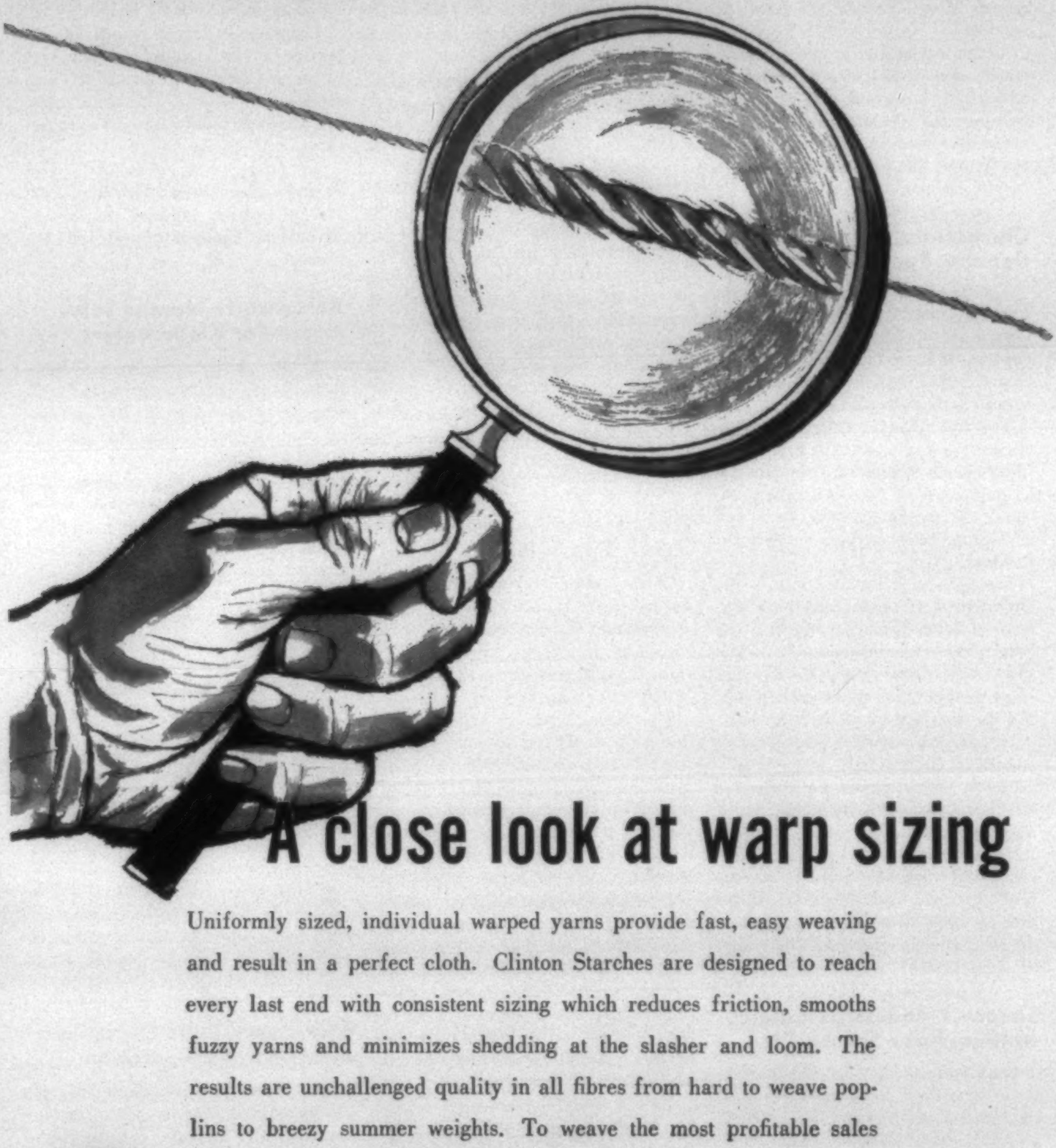
A new roller-type printing machine, with pneumatic pressure nips and a patented method of pattern register, is one of the outstanding machines in the Kleinewefers line. It's available for 1-color to 14-color printing, and in 1-color and 2-color laboratory machines. A complete line of auxiliary printing equipment is also provided.

Kleinewefers also carries chainless mercerizing ranges, hank mercerizing machines, a complete line of calenders and other machines for the finishing trade.

Star Paper Tube Occupies New Danville Operation

Star Paper Tube Inc., Rock Hill, S. C., has moved into its new plant in Danville, Va. Star now operates three manufacturing plants, including another at Austell, Ga. The company, organized in 1955 in Rock Hill, has had manufacturing facilities in Danville since January 1958, and has since tripled the size of the operation. The plant, located five miles north of Danville, was built on a ten-acre site.

The firm offers a complete line of textile products, including convolute and spiral wound cloth tubes, storage tubes, yarn tubes and cores, baling boards, cloth boards and reels, etc.



A close look at warp sizing

Uniformly sized, individual warped yarns provide fast, easy weaving and result in a perfect cloth. Clinton Starches are designed to reach every last end with consistent sizing which reduces friction, smooths fuzzy yarns and minimizes shedding at the slasher and loom. The results are unchallenged quality in all fibres from hard to weave poplins to breezy summer weights. To weave the most profitable sales story — count on reliable Clinton Starches.

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textile bulletin

VOL. 87 *AUGUST 1961* *NO. 8*

Southern Textile Association Members Hold Fifty-Third Annual Meeting At Myrtle Beach

MORE THAN 600 MEMBERS, WIVES AND GUESTS ATTEND; W. B. ETTERS ELECTED PRESIDENT FOR COMING YEAR

MORE than 600 members, wives and guests attended the 53rd annual meeting of the Southern Textile Association June 22-24 at the Ocean Forest Hotel in Myrtle Beach, S. C.

Highlighting the meeting were reports on the current health of the textile industry, and a review of the group efforts that have been made and are being made to stem the flood of low-wage imports into this country.

Guest speakers R. Dave Hall, president-elect of the American Cotton Manufacturers Institute, and Jackson E. Spears, Burlington Industries, cautioned against any undue optimism over the prospects of an early solution to any of the problems now confronting the industry. At the same time each urged against the temptation to call quits to efforts now being made toward that end.

Thought, Action, Loyalty

"Our industry needs every bit of penetrating thought, vigorous action and absorbing loyalty that we are capable of giving it," Hall pointed out. "We are not yet completely free of the recessive trend which has plagued us for more than a year. We are still buffeted by a staggering total of imported goods. We are still seeking equitable solution to the vexing problem of our relationship with other nations. We are still in great need for massive technological break-throughs to improve our production techniques. We are still in search of the key to more comprehensive public understanding of our industry, and its role in the life of this nation."

The ultimate solution to the import problem, he pointed out, doesn't lie solely in increased production and greater efficiency. "But that is no reason to end, or to slow down even in the slightest, our constant search for better ways to do our job. We have a continuing obligation to do the best we possibly can in producing for the consuming public.

"Beyond that, if we are to win in our current campaign against unfair foreign trade policies, we must continue to prove to government, and to the public, that we not only need their support but that we deserve it."

Automation To Be Gradual

Speaking of the emphasis lately given to automation in the textile industry, Hall reminded that, "We have been involved and concerned with automation for more than 200 years in this industry. And we will continue to seek new ways to improve. At the same time, however, this industry has always moved forward with an idea to safe and gradual transitions to new methods, and will continue to follow that policy in the future.

"We need automation to a greater extent than we've had it. We will find the keys to that new automation, and our mills in years to come will be vastly different from mills of today. But with all this technological gain, we will still need the clever hands and the ingenious minds of people," he pointed out.

Human Relations

A primary function of production supervisory personnel in the industry, he noted, is to interpret properly for production people the policies and practices of the industry and the company. The role supervisors play in this area will continue to grow in scope and importance. "The man on the line expects his job to be protected, his needs to be answered, and his ideas considered," Hall pointed out. "The man he

Cone, Roberts, McCrary, Etters

W. B. Etters of Reeves Bros. Inc., Spartanburg, S. C., succeeds R. M. McCrary, Hart Cotton Mills, Tarboro, N. C., as president of the S.T.A. for the coming year. McCrary succeeds J. N. Jenkins of The Kendall Co., Pelzer, S. C., as chairman of the board of governors. Elevated from second to first vice-president was Herman Cone Jr., Cone Mills Corp., Greensboro. Newly-elected second vice-president is D. H. Roberts, Lydia Cotton Mills, Clinton, S. C.

R. Dave Hall: "We have been involved and concerned with automation for more than 200 years in this industry."

Jackson Spears: "We've got to compete just as if we were never going to find a solution to the import problem."

looks to is you (the supervisor). And he will look to you more today than ever before."

No Solution To The Import Problem

In reviewing the industry's efforts to win some consideration from the Kennedy Administration on the import situation, Jackson E. Spears, chairman of the A.C.M.I.'s Foreign Trade Committee, gave some insight on the frustrations that have resulted in the thus-far futile pursuit of a reasonable solution to the problem.

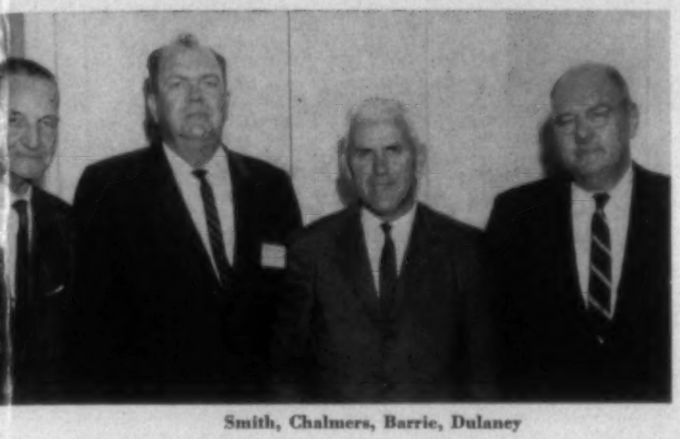
Picking up with last year's pre-election activity, Spears traced the courses followed by groups representing the industry up through the current emphasis being given to the upcoming international conference on textiles arranged by the U. S. State Department.

In retrospect it can be seen that the industry has been consistently deceived by false hopes that glimmer and fade. President Kennedy's pre-election promise to Governor Hollings of South Carolina is an example.

"The then Senator Kennedy," Spears pointed out, "said

1961-62 officers and board members of the S.T.A. include *(first row, left to right)* Troy H. Carter, Woodside Mills, Greenville, S. C.; John L. Sherrill, Cone Mills, Greensboro; Henry W. Suber, J. P. Stevens & Co., Great Falls, S. C.; Jesse Boyce, Erwin Mills, Durham; Ralph C. Going, Fieldcrest Mills, Draper, N. C.; R. P. Hardeman, Riegel Textile Corp., Ware Shoals, S. C.; Herman Cone Jr., Cone Mills, Greensboro; W. B. Etters, Reeves Bros. Inc., Spartanburg; J. P. Hughes, Cone Mills, Hillsboro, N. C.

***(Second row, left to right)* Jack Kissiah, Textile Bulletin, Charlotte; H. W. Buchanan, Reeves Bros. Inc., Bessemer City, N. C.; E. L. Ramey, Inman Mills, Inman, S. C.; Gilbert C. Mays, Erwin Mills, Durham; Rodger Hughes, Reeves Bros. Inc., Spartanburg; D. H. Roberts, Lydia Cotton Mills, Clinton, S. C.; R. M. McCrary, Hart Cotton Mills, Tarboro, N. C.; W. M. Pittendreigh, Riegel Textile Corp., Ware Shoals, S. C.; Smith Crow Sr., Erlanger Mills, Lexington, N. C.; Marion W. Kirby, Catlin Farish Co., Batesburg, S. C.; and J. N. Jenkins, The Kendall Co., Pelzer, S. C.**



Smith, Chalmers, Barrie, Dulaney

Frank P. Barrie of Leesona Corp., Charlotte, is the new chairman of the S.T.A.'s Associate Member Division. He succeeds Carl M. Chalmers, Texize Chemicals Inc., Greenville, S. C., who was elevated to chairmanship of the Associate Member Council. Succeeding Barrie as vice-chairman of the division is W. N. Dulaney, A. E. Staley Mfg. Co., Atlanta. Junius M. Smith, Textile Bulletin, Charlotte, continues as secretary of the division.

that if elected he was going to do something about the import problem. . . . that the power of the Presidency carries with it the authority, administratively, to find solutions to the textile import problem; and that if the power does not exist, he would ask for legislation."

The Kennedy "solution" thus far is contained in his Seven Point Program announced May 2. Spears touched on two of the seven. First was Point No. 6, a directive to the Secretary of State to call for an international conference of textile producing and consuming nations to consider the problem of the movement of textiles and textile products in channels of world trade.

"Speaking for the Foreign Trade Committee of the A.C.M.I.," Spears said, "we feel that there is a need for the holding of such a conference . . . We do not feel that the holding of such a meeting should be so restricted" (referring to the fact that the conference will consider only cotton goods and not overall textile interests).

Pennington, Boyce

Door prize winner Horace Pennington of Cone Mills Corp., Greensboro, accepts gift certificate from Jesse Boyce, Erwin Mills, Durham.

The seventh point in President Kennedy's proposed remedy, Spears recounted, "was the statement that any action taken by the industry under the existing regulations including the provisions of the Trade Agreements Act, Section 8, for taking a petition to the office of Civilian Defense Mobilization, would receive a most careful consideration."

Section 8 of the Trade Agreements Act, Spears explained, is a provision called the Byrd Amendment, that was put into the Act when it was renewed in 1958. "It was an expansion of the meaning of national security for the purpose of handling trade matters . . . It has a two-fold meaning. One, that the President may take action to control or limit imports if an industry which is vital to the national defense is threatened. And two, similar action if the vitality of an industry essential to the national economic well being is threatened."

The industry is moving ahead on this hearing now, Spears noted. "A tremendous amount of work is being done to develop that case and make a very strong presentation."

In the meantime, he added, "We've got to compete, and try to compete, just as if we were never going to find a solution to the import problem. Meanwhile I assure you that those of us working on it are going to continue to do so."

Election Of Officers

In its annual election of officers, the association followed its usual custom of elevating its top echelon. The shift saw R. M. McCrary, this year's retiring president, move up to the chairmanship of the board of governors, succeeding J. N. Jenkins who becomes for life an *ex officio* member of the board. McCrary is with Hart Cotton Mills in Tarboro, N. C.; Jenkins with The Kendall Co. in Pelzer, S. C.

Taking over the presidency is W. B. Etters of Reeves Brothers Inc., Spartanburg, S. C. Moving from second to first vice-president is Herman Cone Jr. of Cone Mills Corp., Greensboro, N. C.

Newly elected to the second vice-presidency—and thus fall-

(Continued on Page 67)

Roane, Mundhenk, Taylor
Henry, Seacord, Patterson, Gill, Jones

Council members of the S.T.A.'s Associate Member Division for the coming year include S. A. Roane, Abbott Machine Co., Greenville, S. C.; R. L. Mundhenk, West Point Machine & Foundry Co., West Point, Ga.; J. R. Taylor, America's Textile Reporter, Greenville, S. C.; Grover C. Henry, Penick & Ford Ltd. Inc., Spartanburg; James E. Seacord, Ashworth Bros., Charlotte; H. B. Patterson, Whitin Machine Works, Greensboro; C. Russell Gill, Arnold, Hoffman Co., Atlanta and C. Leon Jones, Odell Mill Supply Co., Greensboro.

Percentage Of Short Fibers A Valuable Tool In Evaluating Cotton For Spinning Performance

S.R.R.L. STUDY OFFERS "PERCENT EFFECTIVE WEIGHT" AS A NEW ANALYTICAL TOOL FOR FIBER EVALUATION

By JOHN D. TALLANT,
LOUIS A. FIORI
and
AUDREY V. CASTILLON,
Southern Regional
Research Laboratory,[1]
New Orleans, La.

ORDERLY marketing and efficient utilization of any commodity requires rapid, accurate and economical measurement of the properties contributing to efficient utilization. The dominant properties of cotton fibers appear to be their length distribution in the largest aspect *(2, 12, see references at end of article)* and strength. One feature of the length distribution which may be termed the "longer fibers" was the earliest cotton fiber measure, namely, the classer's length. Rapid methods, such as the Fibrograph[2], seem to give excellent measures of this portion of the length distribution.

Length Distribution

Recent research *(4, 13, 15)* has shown that the technological changes in production, harvesting and ginning procedures, coupled with increased and more exacting demands on the cotton fiber through application of high speed production techniques, particularly in high speed spinning and larger packages, have led to the urgent need to measure at least one additional parameter of length. The research has shown that a useful criterion in evaluating cotton for spinning performance and product quality is the percentage of short fibers; that is, the weight below ⅜ or ½ inch. The Suter-Webb array by aligning all fibers to a common base line gives excellent results in measuring short fiber content; however, it is too slow and costly for commercial application and will not be discussed further. Efforts at automating this basic procedure (Uster Staple Diagram Tester) have not been fully successful in this country.

Operating on the premise that it is unnecessary to align all fibers to a common base line, the Fibrograph and later the Digital Fibrograph seeks to measure the short fiber content by optically scanning the randomly caught specimen. The Fibrograph has many excellent attributes of simplicity and speed. Other efforts are under way by both the Southern Regional Research Laboratory and the National Cotton Council in separate contracts to further speed up and make more accurate the measurement of short fibers or some other parameter of length distribution.

One difficulty facing all investigators is determining the additional length parameter which significantly affects spinning performance and product quality. A current investigation at the Southern Regional Research Laboratory may yield some clues. The original work of Kohler *(7)* stated that below a certain length, estimated at about 8 mm. or very nearly ⅜ inch, the yarn would not have sufficient twist to bind these fibers and thus prevent their slippage during a rupture of the yarn. Using these concepts and generalizing further, it follows that the tips of the longer fibers also are incapable of being bound by twist in the yarn sufficiently to prevent slippage. From a previous study *(3)* there were available for 41 cottons, the Suter-Webb array and fiber strength data as well as twist-strength curve data for these cottons spun, where possible, into a range of yarn sizes from 15/1 (40 tex) to 80/1 (7.4 tex). The term "Percent Effective Weight" is proposed to describe the fraction of the cotton which could be expected to be capable of rupture under the hypothesis described above. The "Percent Effective Weight" was computed for each of the 41 cottons on a basis of five "critical lengths" ranging from ⅛ to ⅝ inches. Thus it became possible to confirm or disprove, by independent means, the earlier findings of Kohler. It then seemed logical to hypothesize that maximum yarn strength should depend on the "Percent Effective Weight" and fiber bundle strength in accordance with the following equation:

Maximum Yarn Strength $=$ A $+$ B (Percent Effective weight) (Fiber Strength) where A and B are constants. Maximum yarn strength was correlated with the calculated quantity for various critical lengths. Since fiber strengths were available based on zero and ⅛ inch gage lengths (Stelometer), both measures were used in parallel computations.

The results are shown in Fig. 1 in which the correlation

ABSTRACT

IT IS POINTED OUT that while the classer and instruments give an excellent measure of the longer fibers in the length distribution of cotton, increased demands by the industry require the measurement of at least one additional parameter of length distribution. A new concept termed "Percent Effective Weight" is introduced as an analytical tool and seems to indicate that about ⅜-inch is the critical length below which fibers are incapable of being twisted into a yarn structure sufficiently to rupture and contribute to yarn strength.

Various types of strength tests are discussed and it is shown that the major proportion of time is consumed in the present tests by loading the jaws and shearing the outside fibers. It is suggested that efforts at automation should concentrate on this phase.

Two suggested procedures for measuring length distribution characteristics are described. One procedure utilizes the conventional strength testers, but uses a modified procedure of specimen preparation which allows the short fibers to remain in the specimen. The other procedure, for which no experimental work has been done, suggests an optical principle which requires no specimen preparation.

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[1] One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture.

[2] Use of a company and/or product named by U.S.D.A. does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.

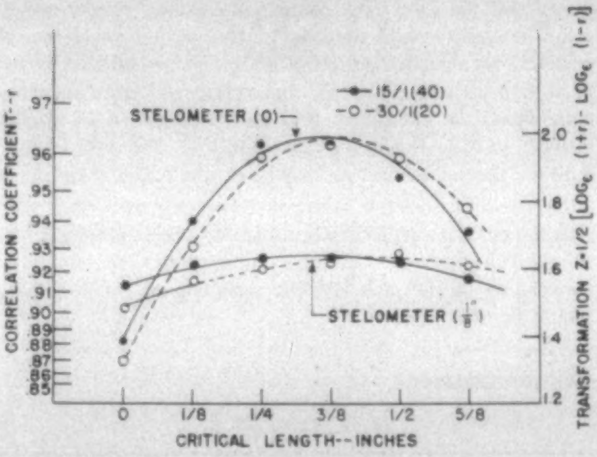

Fig. 1—Correlation of effective weight times fiber tenacity versus single strand tenacity for various critical length bases.

coefficients observed for the 15/1 (40 tex) and 30/1 (20 tex) yarns are plotted against the critical lengths which formed the basis for the various computations of "Percent Effective Weight." The correlation coefficients are plotted nonlinearly in accordance with the Z transformation so that equidistant changes in the ordinate represent changes of equal importance *(11)*. When the zero gage length fiber strength values are used, the degree of correlation between fiber and yarn strength increases markedly until a peak very near ⅜ inch is reached. When the ⅛ inch gage length fiber strength is used, the increase in effectiveness of correlation due to the inclusion of the "Percent Effective Weight" is negligible. It will be noted that for the zero critical length the correlation is only a simple correlation between fiber and yarn strength, since the "Percent Effective Weight" would be 100% for all cottons. For this point, the ⅛ inch gage length fiber measure is superior to the zero gage confirming previous work *(1, 6)*. However, when the concept of "Percent Effective Weight," or in other words, the length distribution of the samples is taken into account, the zero gage length strength proves to be the superior criterion of yarn strength.

The implications of this rather abstract investigation may hold considerable value. It would appear that Kohler's findings are valid and that fibers longer than ⅜ inch are much lower. It will be noted that correlation coefficients of about 0.96 are observed without consideration of the classer's length directly, thus perhaps implying that insofar as maximum yarn strength is concerned, fiber strength and length distribution in its largest sense are the major factors. Of course, the cottons with the longer classer's length tended, in general, to have higher effective weights for two reasons: (1) they tend to have less short fibers *(16)*; and (2) the longer fibers are more effective since their ineffective tips constitute a smaller proportion of the fibers. Taking length distribution into account, the zero gage length fiber strength measure would appear to be superior. Conversely, it is speculated that fiber strength measurements at the ⅛ inch gage length, with present instruments and techniques, may in some manner take into account length distribution characteristics.

Strength Measurement

In the measurement of fiber strength, three instruments seem to dominate the field, the Pressley, Stelometer and Clemson Flat Bundle testers. They all have in common the use of the same type jaws. Loading of the jaws is similar for all three instruments, although manufacturers' recommendations differ to some degree.

Table I shows a very rough breakdown into four categories of the relative time consumed in performing a fiber strength test, exclusive of sample preparation. It is immediately seen that the actual breaking of the specimen occupies a small proportion of this time. The largest time consumption is the loading of the specimen into the jaws. This, coupled with the weighing of the specimen, obviously shows where research effort at automating the test is most needed.

Table I. Relative Time Consumption, Exclusive Of Sample Preparation For Preparing A Fiber Bundle Breaking Test

Operation	**Relative Time Consumed** **%**
Loading Jaws and Shearing Fibers	45
Breaking Specimen	10
Unloading Jaws, Weighing Specimen and Recording	35
Calculation and Checking	10

One of the strength instruments, the Stelometer, affords a magnification of 40 on the elongation of the fiber specimen. This magnification allows accurate reading of the elongation with the strength determination. It is suggested that fiber bundle elongation, which is obtainable at little extra cost over the strength measurement, is a property to which greater attention should be paid. Results of investigations of cottons differing in elongation *(3, 8, 9, 10)* show a general relationship between fiber bundle elongation and yarn elongation, and indicate that both the level of fiber elongation and the variability of yarn elongation are important parameters contributing to product quality.

Novel Methods For Measuring Length Distribution

As pointed out earlier, the urgent need is for the measurement of some parameter of the length distribution in addition to the classer's length, upper half mean length (Fibrograph), or upper quartile length (Array). Efforts with relatively conventional methods are underway in various laboratories. However, these attempts all seem to have in common the viewpoint that the short fibers are measurable by modifications or refinement of procedures which are inherently more accurate in measuring the longer fibers. We would like to offer two markedly different approaches to this problem.

The first approach attempts to obtain an indication of the short fiber content by means of a modified strength test, and if proven useful, could conceivably be performed on existing bundle strength testers. The theory is simple. Instead of carefully combing out all fibers shorter than the extreme thickness of the jaws and spacer, if one is used, a ribbon-like specimen with all the fibers left in is prepared. With this modified specimen, short fibers will contribute weight to the specimen but will be largely ineffective insofar as the strength of the bundle is concerned. Thus, the "strength index" will be lowered. To take into account differences in the inherent fiber strength, a conventional strength test is also performed on the cotton. The ratio between the strength of the samples containing short fiber and the conventional strength might then be an index of the ineffective portion or percentage of

Table II. Effect Of Inclusion Of Short Fibers In The Fiber Bundle Of The Stelometer And Clemson Flat Bundle Testers On The Strength Index

Short Fiber Content % Less Than ⅜ Inch	Effective Strength Index[1] (% of Control) Stelometer ⅛ Inch	Effective Strength Index[1] (% of Control) Clemson Flat Bundle 10 mm. Spacer
	HIGH	ELONGATION
3.6 (Control)	100	100
8.6	94	98
11.5	93	92
19.5	89	85
	LOW	ELONGATION
2.9 (Control)	100	100
8.7	97	98
13.8	89	92
16.5	85	91

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[1] "Index" ratio of strength index with short fibers left in to conventional strength index.

short fibers. This ratio is called, for purposes of this report, the "Effective Strength Index."

Table II shows preliminary data obtained by this procedure. This data was obtained using roving carefully untwisted to parallelize the fibers but with no combing to remove fibers. Thus, the specimen had parallelized fibers of all lengths and with random starting points. The increased short fiber contents of these rovings were obtained by cutting sliver and adding small amounts of the cut sliver to the parent cotton *(14)*.

There appears to be a moderate but real decrease in the "Effective Strength Index" with increases in short fiber content. The chief value of this approach appears to be the possibility of obtaining an index relative to short fiber content at about the cost of strength tests and without any elaborate equipment. However, further investigations must be conducted on the optimum thickness of jaws and spacer, if any, and the technique for preparing the specimen from raw cotton.

Letting the imagination wander still further afield for the second approach, perhaps something akin to length distribution could be measured without elaborate specimen preparation at all. Consider that if the staple length and a figure roughly proportional to linear density were known, as they nearly always are with classer's length and Micronaire reading, then the number of fibers in a known mass would probably be a very useful estimate of the length distribution. How can this number be determined without orienting, arraying and counting? It is possible that the new field of fiber optics may offer such an avenue. If a mass of fibers were compressed between two transparent plates and light passed through the assembly, a cotton sample with many short fibers would require the light to cross from fiber to fiber more often than if the short fiber content were low. The emerging light analyzed for intensity and character, such as polarization, might furnish information on the length distribution.

Conclusion

In conclusion, it appears that the cotton industry is not in any difficulty in determining the length of the longer fibers or staple length. However, increased demands on the cotton, imposed by increased spinning speeds by the textile industry, coupled with novel methods of production, have resulted in the urgent need for an additional length parameter. It is suggested that the short fiber content is a useful, simply understood, straightforward measure of this second parameter of length. The rapid measurement of this parameter has proved to be difficult and efforts for its accurate and rapid measurement should be intensified. It is also possible that an interim method such as measuring the "Effective Strength Index," with the short fibers left in, may be of immediate value.

Bundle fiber strength values correlate extremely well with yarn strength, particularly when coupled with the length distribution characteristics. Efforts to automate this test, especially the loading of the jaws and the weighing of the specimen, should be intensified also.

Acknowledgment

Acknowledgment is expressed to E. F. Schultz Jr. and H. W. Little for statistical assistance and to Miss D. C. Legendre and Mrs. M. M. Smith for the flat bundle strength measurements.

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Southern Machinery Co. Details The Operation Of Its Bild-O-Matic Spinning Builder Motion

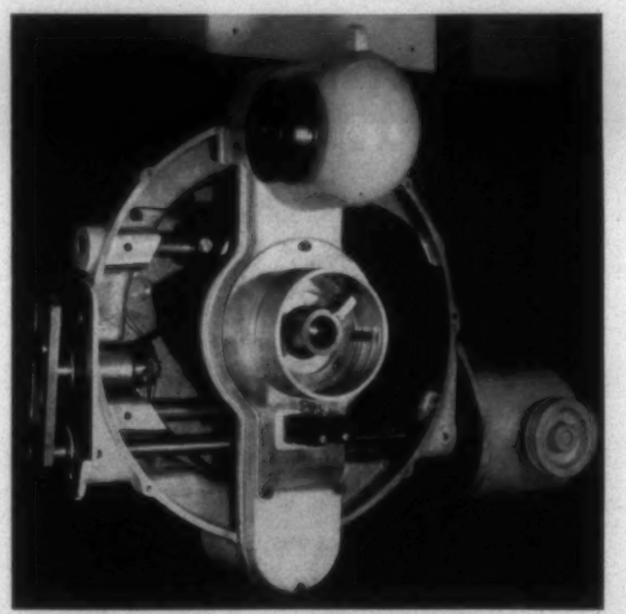
THIS RECENTLY DEVELOPED BUILDER MOTION AUTOMATICALLY BUILDS THE FEELER BUNCH, FULL BOBBIN AND TIP BUNCH

SOME 190 mill executives and news men were treated to the first private showing of Southern Machinery Co.'s Bild-O-Matic spinning frame builder at the Textile Hall in Greenville, S. C., from June 12-15. The unit is said to give an extremely smooth traverse, bears the ring rail down in one to two turns and leaves the frame in position to doff without winding the builder back.

What Is It?

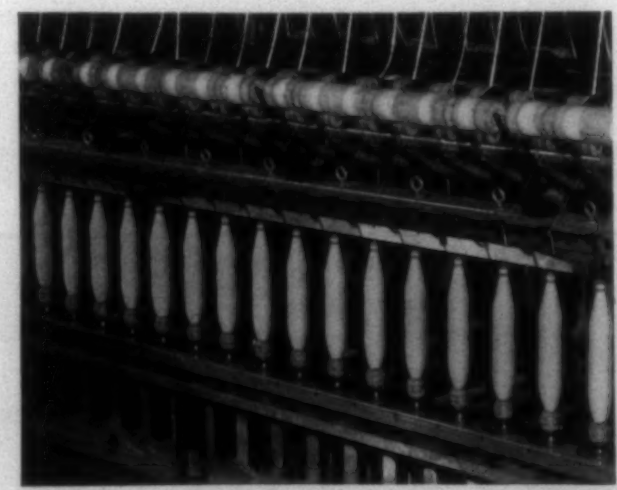
The Bild-O-Matic is a spinning frame builder motion that's totally enclosed and is designed to build a feeler bunch, the full bobbin, a tip bunch, lower the ring rail and stop the spinning frame in doff position, all automatically.

Bearing the ring rail down (which has been the stumbling block in the development of a new builder motion for direct spun filling) is accomplished by the Bild-O-Matic with only 1½ to 2 turns of the yarn from the tip to the base of the quill—some eight to ten inches. The ring rail descent is in proportion to the speed of the front roll and is accomplished without end breakage or kinky filling.



The Bild-O-Matic is a totally enclosed builder motion that can be placed on almost all spinning frames—the limiting factor being the width of the frame.

The heart of the unit is a cycling cam that's cut so that each motion in building a bobbin is controlled. One section builds the feeler bunch by reciprocating through a pre-determined cycle, inching forward on each traverse of the ring rail. After the bunch has been completed, the cam moves into the body section. The body is built with straight sides from top to bottom without regard to the type taper desired. This feature, the company noted, allows more yarn to be placed on the quill. Following this the cam is in position to place a bunch on the tip of the bobbin. The bunch is of a pre-determined yardage and is completed almost immediately. After the tip bunch has been produced, the cam is in position to bear the ring rail down.



The Bild-O-Matic builds the feeler bunch, the body of the quill and the tip bunch before bearing the ring rail down for doffing.

An electric control panel is utilized to control the re-setting of the Bild-O-Matic after the doff. Prior to this development the builder motion had to be rewound manually to start the next run. Incorporating an on-off switch and micro switches, the unit is of modular design. All switches can simply be unplugged and replaced. They can be used over one million times without failure. At once per doff, Southern hopes for a life span of some ten years.

Other parts of the unit include the main housing, which incorporates a pump for the lubrication of all segments of the builder, and bevel gears constructed to control and operate the build on the quill. These gears replace the conventional pick gears. Conventional lay and twist gears are used with the Bild-O-Matic.

A three-point, leaf filling cam is utilized in the builder motion, but is not, now, the sole control for the mechanism. It works in conjunction with the cycling cam through a spur gear that can act as a worm or racking gear. The filling cam also operates a traverse yoke and cam follower, giving them a to and fro motion for the traverse.

A slide with a cam follower is utilized on the front cover and moves up and down. This motion is transferred to a pulley through a cable onto the sector gear, which, in turn, controls the vertical motion of the ring rail.

The unit is almost completely cam operated. All cams are

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of hardened steel and have been precision built, in contrast to conventional cast cams. It requires a smooth-tipped quill, but is not limited by length of the quill.

Loom Transfer

Designed to produce direct spun filling for the newer type magazines, the unit is said to eliminate handling because of its smooth-tipped bunch. The quills are placed into the magazine without the conventional stripping of yarn for threading the shuttle. Instead, a special stripping device for the bunch has been built by Draper Corp. and is used on its new magazines.

At transfer, the quill falls into place and the tip is routed into the special stripping device, which holds the quill between the taper and the bunch. When the quill is driven into the shuttle, the stripper pulls the bunch from the quill and holds it until cut by the thread cutter.

Warp Bobbins

The builder not only works for direct spun filling, but is capable of operating on warp bobbins as well. This feature is designed to make automatic mechanical end pick-up practical in the spooling process, eliminating some spooler operators. It will control all types of build, including filling, warp or combination, and makes short stroke filling build practical on warp bobbins, reports Southern.

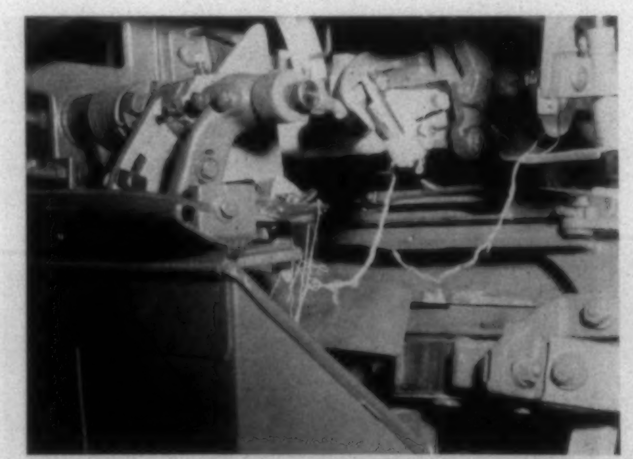
Advantages

Some of the advantages of the Bild-O-Matic are derived from the tip bunch, the automatic cycle control and the precision construction.

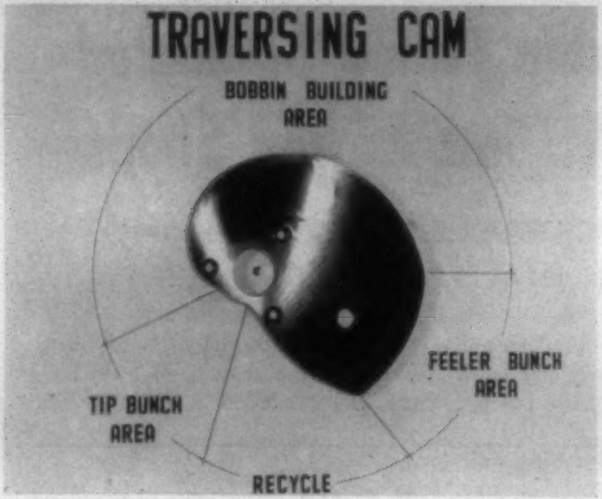
The tip bunch is said to enable mills to use direct spun filling in automatic magazine loaders. It also utilizes only enough yarn for a tail some eight inches long at transfer.

The automatic cycle control is designed to insure consistent yardage on the bobbins from frame to frame, allowing closer production control. It eliminates over-runs or short doffs by automatically stopping frames. The third advantage listed by the company is that the yarn is wound on bobbins with controlled precision to insure uniform lay of each wrap, eliminating skips and rolling.

There are many advantages claimed by Southern for its



The tip bunch is designed to reduce filling waste by eliminating the stripping of yarn from the quill in filling conventional squirrel cages. Here the quill is shown ready for transfer with the tip bunch showing.



The heart of the Bild-O-Matic is this cycling cam. It controls all phases of the bobbin build.

precision construction and design of the unit. This feature is designed to eliminate backlash from worn parts in the head end by incorporating counterbalanced design. It insures minimum power requirements due to anti-friction construction. There is no manual rewinding of the builder. The same basic unit can be applied to right or left-hand frames. The builder is mounted by simply boring three ½-inch holes for leveling purposes—the only factor to be considered is the width of the frame. Southern says that it will install the first two or three units in a mill, but installation is so simple that mill personnel can install them after that.

Costs

Southern announced that the first 50 units are to be sold at $725 per unit and that it will reach full production of the builder in early '62 after it moves into its new building. The cost of the Bild-O-Matic can be written off in a matter of two to three years, according to the company. It gave an illustration of one mill, running 18½s, which paid off the total cost—everything included—in less than three years after taxes.

The new building is to be a 30,000-square-foot unit costing some $200,000 and is scheduled for completion in October. Equipment is to be moved into the building then for the production of the Bild-O-Matic, the Smoothee and the Hunt Let-Off. Tentative plans call for two additional units of 30,000 square feet each to be added in the future.

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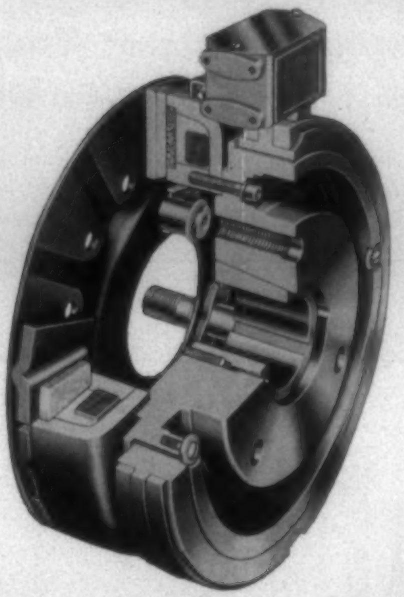

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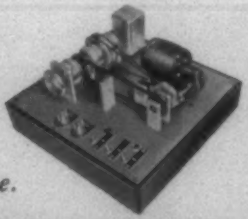

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Rovematic High-Speed Roving Frame Scheduled For Full Production Soon At Saco-Lowell Shops

A 14x7-INCH FRAME, THE UNIT IS CAPABLE OF CONSUMING MORE THAN 36 BALES OF COTTON IN A 120-HOUR WEEK

WITH Saco-Lowell Shops fast tooling up for full production of its Rovematic, now would appear a good time to take a revised look at what the frame will do, and how it does it.

It produces a 14x7-inch package at flyer speeds up to 1,200 r.p.m. All mechanisms normally located under the roller beam have been moved into the head end. It is designed to virtually eliminate any ends-down in the area between the front roll and the flyer. When making one hank roving, it will doff in 3¼ hours and it can consume some 36 bales of cotton per 120 hours.

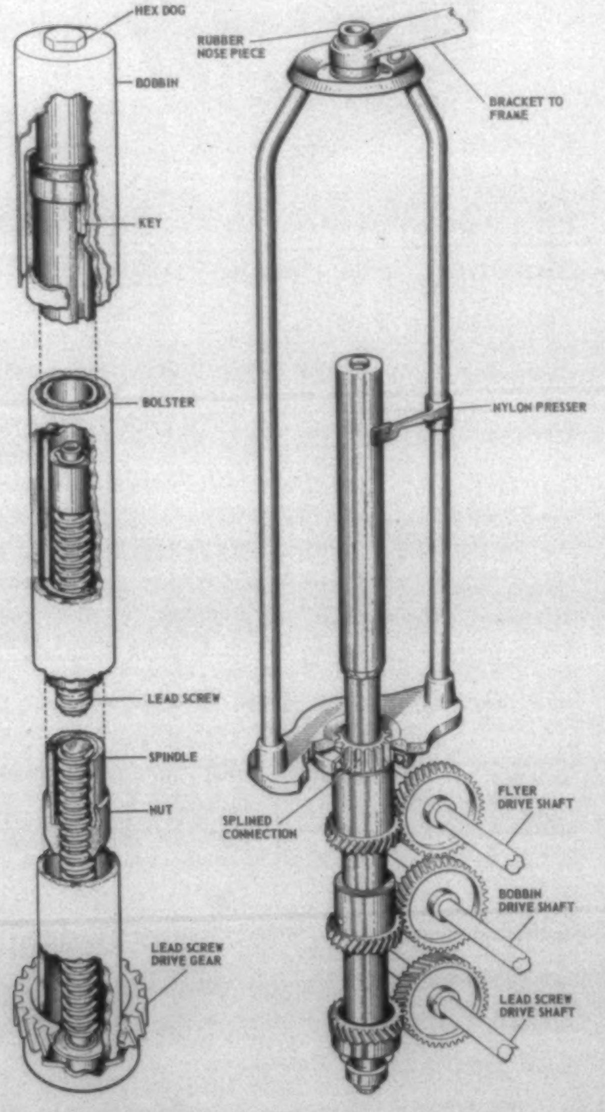

Fig. 1—A completely new spindle and flyer arrangement allows the Rovematic to run at 1200 r.p.m. with only a fraction of the deflection experienced at less than 750 r.p.m. by conventional flyers.

Operating Features

Saco-Lowell describes the drafting element used on the Rovematic as a "marriage" of the Tru-Set top arm weighting system, originally developed for spinning frames, and the FS2 roll and apron arrangement used for many years on the company's roving frames. The unit is completely equipped with anti-friction bearings in order to handle the high front roll speeds required and eliminate lubrication schedules.

One of the most significant features of the frame is the new spindle and flyer arrangement (Fig. 1). The spindle assembly is a telescoping structure made up of two tubes. The inner traversing tube called the spindle is keyed against relative rotation to the outer tube called the bolster. A lead screw is mounted inside the spindle to control its traversing. A hex dog made from molded nylon is mounted on top of the spindle and engages a socket in the top head of the bobbin.

The flyer is a radical departure from conventional practice and is not removed from the frame for doffing. It has a top and bottom head connected by lengths of steel tubing. The drive is through a splined connection in the bottom head. The top head is carried in a ball bearing mounted on a bracket projecting from the roller beam. Top and bottom heads have substantial rims which provide areas where weight can be removed by drilling for precision dynamic balancing. The paddle or presser foot is made from nylon. Its lightweight plus the fact that the flyer is "tied together" at both ends minimizes flyer leg deflection.

There are three horizontal shafts leading from the head end of the frame that drive the flyers, bobbins and lead screws. As seen in Fig. 1, the flyer drive shaft drives the flyers at a constant speed at all times; the bobbin drive shaft drives the bobbins at a constantly decreasing speed to compensate for the increasing package diameter as the doff progresses; and the lead screw shaft drives the lead screws first slightly faster than the spindles which makes the bobbin traverse up, and then slightly slower than the spindles which makes the bobbins traverse down.

A rubber nose piece is incorporated on the flyer to trap twist between the top of the flyer and the bite of the front rolls, thus strengthening the strand. Saco-Lowell says that this is so effective an end rarely breaks at the front roll.

Another feature of the Rovematic is the flyer positioning system which is designed to automatically stop each flyer in the best position for piecing-up when an end comes down. The frame first comes to a complete stop and then inches forward until the flyers are in their proper position.

One of the striking things about the appearance of the

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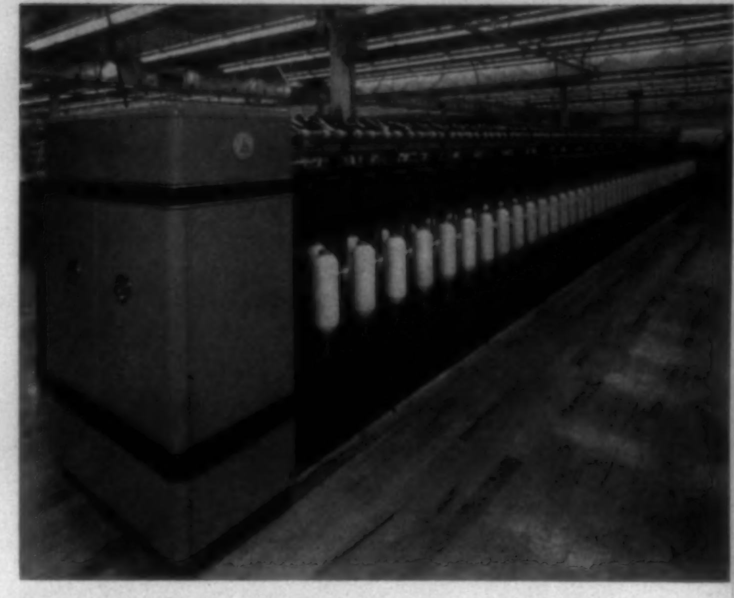
Total Draft Constant	Draft Constant Change Gears Upper	Draft Constant Change Gears Lower	Total Draft Change Gears	Approximate Range of Drafts
180	83	82	30 to 72	2.50 to 6.00
288	102	63	30 to 72	4.00 to 9.60
397	114	51	30 to 72	5.51 to 13.23

Rovematic is the absence of the usual awesome array of gears and mechanisms under the roller beam. The question naturally comes, "Where did it all go?" Very simply, it has all been consolidated in two large gear boxes in the head end of the frame.



The Saco-Lowell Rovematic has been running on an experimental basis for over a year at Greenwood Mills' new Sloan Plant near Greenwood, S. C. The frame is a 14x7 machine capable of producing 96 ounces of roving per bobbin per doff.

Lubrication Systems

In order to overcome the familiar tension problems due to belt slippage, the cones of the conventional frame have been replaced with a PIV drive manufactured by the Link-Belt Co., Chicago, Ill. This, together with the twist gearing, lay gearing and compound or differential, is mounted in one oil-tight gear box. The second box houses the builder mechanism. The mechanisms in both boxes are continually flooded with oil from a control pump and require no attention except to maintain the proper oil level.

The spindle and flyer assemblies are carried in ball bearings at all points where loads are appreciable. The spindle cases which support these parts and house their drives are oil tight. The gears on the lower drive shaft dip into oil in the bottom of the cases and throw it over all the internal parts, thus eliminating manual lubrication of spindle and flyer assemblies and their gear drives. The only lubrication chore in this area is to check the oil level in the inspection windows provided.

Power Flow

The heart of the drive in the main gear box is the tandem differential, so-called because it is actually two differentials mounted on the same shaft. Fig. 2 shows how the power is brought to this unit and then distributed to the flyers, spindles and spindle lead screws.

A totally-enclosed fan-cooled motor delivers power to the flyer drive gear of the differential. This gear, in turn, drives the flyer drive shaft in the spindle case at constant speed and, as far as the flyer drive is concerned, acts as an idler.

Attached to the flyer drive gear is the bobbin ring gear. This meshes with a pair of planet gears carried in a cage integral with the bobbin drive gear which transmits power to the bobbin drive shaft in the spindle case. Also meshing with the planets is the bobbin sun gear. Still referring to Fig. 2, it is obvious that if the bobbin sun gear is held stationary, the speed of the bobbin drive gear will be proportional to the flyer drive gear and the gear ratios in the remainder of the drive are such that flyers and bobbins would turn at the same speed. It is also obvious that if the sun gear is turned in the same direction as the flyer drive gear, the bobbin drive gear will turn faster and the bobbins will lead the flyers. This speed increment, added by the sun gear is called the winding speed and must vary inversely with the package diameter. The variable speed of the bobbin sun gear is supplied by the PIV (Positive Infinitely Variable) unit.

While the mechanisms appear different, the principles thus far are identical to those of the conventional roving frame. It will be remembered that if the lead screws turn faster than the spindles, the bobbins will traverse up and if they turn slower than the spindles, the bobbins will traverse down. The drive for the lead screws is accomplished as follows.

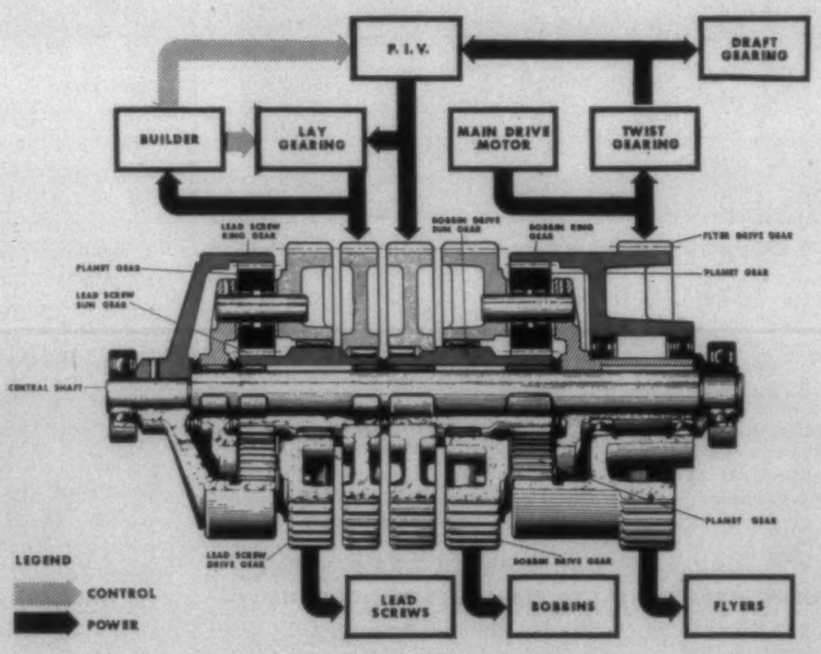


Fig. 2—All drives for the spindle, flyer and screw are transmitted through this tandem differential. It's called by that name because, in actuality, it is two differentials tied together.

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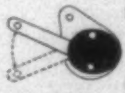

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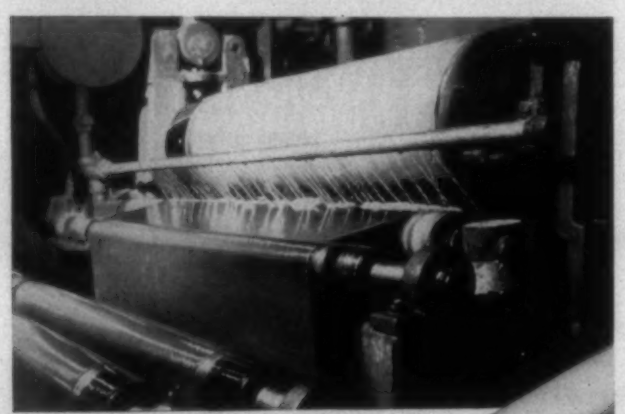

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The bobbin drive gear in Fig. 2 and its integral cage are keyed to the central shaft of the differential and thereby turn the lead screw ring gear at the opposite end of the unit at the same speed. The lead screw ring gear meshes with two planets carried in a cage integral with the lead screw drive gear. Also meshing with the planets is the lead screw sun gear. If the lead screw sun gear is held stationary, the lead screw drive gear will turn in proportion to the bobbin drive gear and the gear ratios in the remainder of the train are such that the lead screws and the spindles will turn in unison and no traverse will result. If the lead screw sun gear is turned in the same direction as the lead screw ring gear, it is obvious that the lead screws will turn faster than the spindles and the bobbins will traverse up. If, on the other hand, the lead screw sun gear is turned in the opposite direction, the lead screws will turn faster than the spindles and the bobbins will traverse down.

The lay gearing which drives the lead screw sun gear incorporates a change gear to vary its speed and thereby the rate of bobbin transfer. This, of course, determines the lay or distance between wraps on the bobbin.

The lay gearing also incorporates a pair of reversing clutches which are controlled by the builder. These determine the direction which the screw drive sun gear turns and therefore the reversals of the bobbin traverse. These clutches are the counterpart of the familiar twin gears on the conventional roving frame.

Builder Motion

The builder has two functions; first, to control the traverse reversals so that the length of traverse will shorten as each successive layer of roving is put on the bobbin, and secondly, to control the PIV so that the r.p.m. of the bobbin will decrease in just the right amount with each new traverse.

To accomplish the first function, a rocker shaft is provided which connects the reversing clutch in the main gear box with the builder housing. To operate this rocker shaft, the builder incorporates a variation of what is commonly known in the design field as a "load and fire" mechanism. This mechanism is arranged to "fire" the rocker shaft in successively shorter periods of time. The rate of shortening is determined by a change gear on the outside of the builder housing. This, of course, corresponds to the conventional taper gear.

To accomplish the second function, the Rovematic has a 180° plate cam mounted on a shaft protruding from the back of the builder housing. The PIV control arm protruding from the side of the main gear box engages this cam. The plate cam rotates in very small increments with each traverse change in the builder mechanism and this controls the output speed of the PIV. The amount of rotation of the cam at each traverse change is determined by a change gear mounted on the front of the builder housing. This is the counterpart of the familiar tension gear on conventional frames.

Doffing Procedure

Doffing the Rovematic is accomplished in four steps. (1) Loose roving is run up on the top of the flyer as on the conventional frame. This is accomplished by jogging the frame while the spindles and flyers are made to turn at the same speed. To make the flyers and spindles turn at the same speed, the drive from the PIV to the bobbin drive sun gear is dis-

(Continued on Page 71)

The Loomfixer And His Job

Part 31

THE LOOMFIXER IS AN INSPECTOR AND MUST PERFORM THIS FUNCTION WELL IF HE IS TO PREVENT TROUBLE

By **WILMER WESTBROOK**

IT is a part of the loomfixer's duties to make regular inspections of the cloth as it is being woven and to check the various parts and motions of the looms. This work can be done more effectively and more easily if it is done in a systematic manner.

As soon as possible at the beginning of the work day the loomfixer should walk down the weave aisle and:

(1) See if the shuttle is entering and leaving the box correctly.

(2) Look at each thread cutter. The cutter should have a single strand of filling yarn in it, the end held by the cutter being cut cleanly. If there is a bunch of strings or none at all in the cutter it should be adjusted or exchanged immediately.

(3) Look in the quill can and see if there are any empty or completely exhausted quills or partially filled ones. If the loom operates with a filling feeler there should be a bunch containing from four to ten yards on each quill in the can.

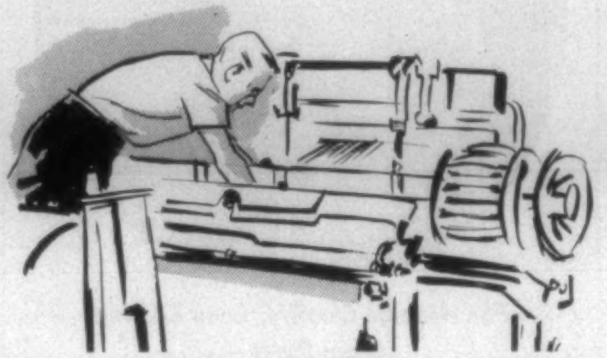
(4) Glance at the pick counter to see if it is set to register on the correct shift counter and see if the reading is abnormally high or low.

(5) Check the filling motion and see if action of the fork is correct and grate is clear.

(6) Look at temple and inspect the cloth, beginning at the selvage and scanning the cloth at the fell. Many defects such as misdraws, missing warp ends, spread dents, doubles and coarse threads can be seen at the fell much easier than is possible after they have been completely woven in.

(7) Look at opposite temple, filling motion (if side fork is used), filling feeler and check boxing of the shuttle at this end of the loom.

The loomfixer should inspect the shuttle frequently, looking for splinters, nicks, scars and a loose spring or eye.



Small repairs and adjustments should be made immediately —bigger jobs should receive attention as soon as possible

(8) Turn to opposite loom and inspect in same manner, in reverse order. Take each step in regular sequence so as to avoid unnecessary walking and lost motion.

(9) Rest the hands on the cloth between the fell and the take-up roll or breast board while inspecting to see if the warp tension is correct. Make any needed adjustments to the let-off motion at once.

Inspecting is nothing more than observing, but it is a skill that must be developed. If you are preoccupied or don't know what to look for, you may see something that is wrong and out of place and it will not register.

The loomfixer should form the habit of inspecting each time he walks by a loom. Many faults can be detected and remedied before damage is done if the loomfixer is constantly alert and takes immediate steps to fix anything he sees that is not as it should be.

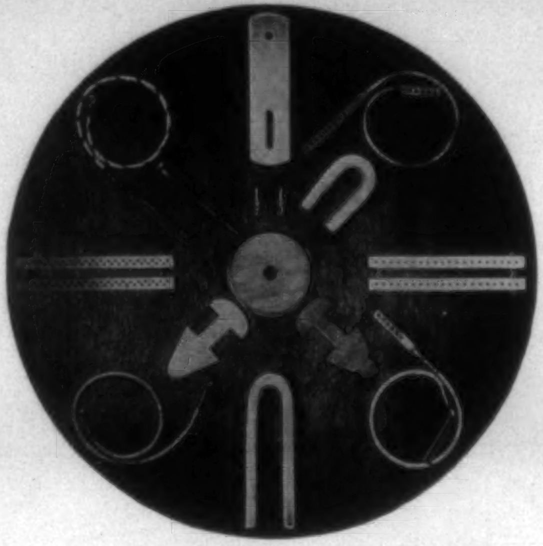
The loomfixer should be so alert that he sees even small things such as metal dust or fragments on the floor indicating abnormal wear caused by misaligned bearings, incorrectly meshed gears, loose or broken loom parts.

Unusual conditions can sometimes be detected by sound, feel, or scent as well as by sight. A dry bearing will generate heat and can be detected by feel or scent; an improperly meshed gear or one that has some teeth stripped will make a screaming sound that can be heard above the racket of the looms; a pick cam that has slipped out of time or grears that are meshed too deeply can be felt because the loom, and sometimes the floor, will vibrate excessively.

At warp-out the loom fixer should inspect every part of the loom. Look for worn, loose or broken parts. Check the nuts on vital parts such as the crankshaft and cam shaft bearings, pick shaft bearings, pick cams and pick balls.

When a new warp is started, again inspect the loom. See that the warp tension is correct, that selvages and body ends are drawn in correctly, that temples are spaced right, harnesses correctly set, all parts lubricated as prescribed, and the filling motion and warp stop motion are operating correctly.

Always inspect a worn or broken part when it is taken



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from the loom. Such an inspection will often reveal the cause of failure and a repetition can be prevented.

Return to the loom after any major repair job and check it several times during the work day. This inspection is especially important after a new shuttle has been put in the loom.

As the loomfixer becomes inspection-conscious he can see many things that are danger signals—things that are so inconspicuous they would not have any meaning to the untrained observer.

An excessive collection of lint under a loom will denote harnesses out of time, an extremely high warp line, sticking whip rolls or other related loom faults. Swinging heddles point to worn cams or treadles. Jerky motion of the harnesses show that the top or head is not operating as it should. A telescoping roll of cloth or a roll that has one end bigger that the other indicate a sticking spring shaft, gears or racks. Uneven movement of the picker stick can point to any one or a combination of faults such a broken or loose parallel spring, worn parallel assembly, sticking pick shaft, worn pick cam or pick ball, or an incorrectly adjusted check strap.

Develop the habit of observing and also of perceiving what you see. Don't ignore any danger signal, regardless of how slight. The discovery of small clues that show all is not as it should be, followed by immediate, effective remedial action, is the best sort of preventive maintenance. The simple act of tightening a nut or of putting a few drops of oil where needed will often prevent a major break-down, hours of hard labor, wasted loom parts, and many yards of second-quality cloth.

Cotton's Share Of Apparel Market Up But Household And Industrials Down

U. S. apparel production consumed more cotton in 1960 than in any previous year, the National Cotton Council reports. Preliminary figures from a council study show that cotton held 62% of the apparel uses last year, compared with 61% in 1959. Men's and boys' apparel accounted for 2.5 million bales, up 2% over 1959, giving cotton 73% of the market. Children's and infants' apparel took .7 million bales, 77%, the same share as in 1959. Women's, misses' and juniors' apparel consumed 1.1 million bales, 43% of the market, and the same as the previous year. Cotton's percentage shares of household and industrial markets, however, declined slightly from the 1959 level. Household uses took 2.3 million bales, 48% of the market. Industrial uses accounted for 1.5 million bales, 23% of the market.

S.T.A. Announces Fall Meeting Schedule

The Southern Textile Association has announced the following schedule for its Fall divisional meetings:

South Carolina Division—Saturday morning, October 14, Clemson College, Clemson, S. C. Technical program at 10 a.m.; lunch at 12:30 p.m.

Northern North Carolina-Virginia Division — Staurday morning, October 21, Cooleemee, N. C. Technical program at 10 a.m.; lunch at 12:30 p.m.

Eastern Carolina Division—Saturday morning, October 28, School of Textiles, North Carolina State College, Raleigh, N. C. Technical meeting at 10 a.m.; lunch at 12:30 p.m.

Piedmont Division — Thursday evening, November 9, Johnston Memorial Y.M.C.A., Charlotte, N. C. Supper at 6:30 p.m.; technical program at 7:15 p.m.

The meetings are open to both mill operating personnel and supplier representatives.

How The Silicon Controlled Rectifier Can Be Applied To Textile Equipment In The Mills

HERE'S A PEEK AT SOME OF THE WAYS A TEXTILE MACHINERY DESIGNER USES THIS MIGHTY MITE

By **WILLIAM E. CRONQUIST***

THE silicon controlled rectifier is a new tool of the electrical equipment designer. With this tool he will be able to offer adjustable speed d.c. drives, speed and voltage regulators for any use and, soon, adjustable speed a.c. drives. These will feature higher accuracies, faster response to deviations, simpler circuits and smaller, lighter, cooler and quieter control panels.

What does this new "beast of burden" look like? Fig. 1 shows a conventional silicon rectifier and a silicon controlled rectifier of similar ratings. Note the small third terminal. This is the control or gate terminal which gives it unique characteristics.

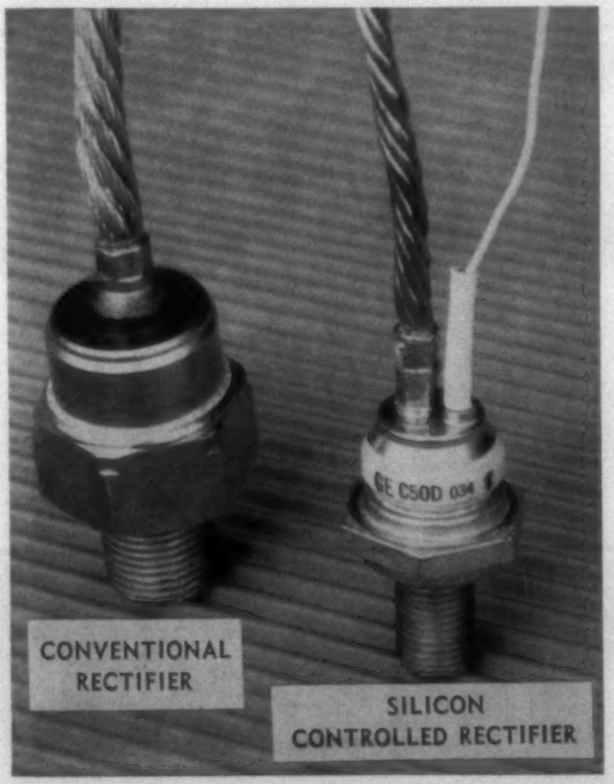
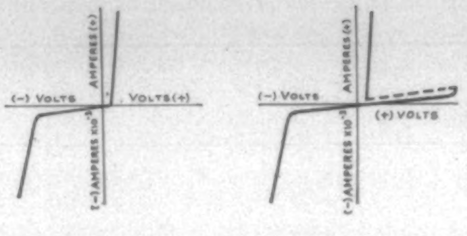


Fig. 1—This shows the similarity in outward appearance of a conventional silicon rectifier and the silicon controlled rectifier. The small third terminal on the controlled rectifier is the control or gate terminal which makes the difference.



CONVENTIONAL SILICON RECTIFIER SILICON CONTROLLED RECTIFIER

Fig. 2—The conventional silicon rectifier passes large currents in the forward direction with little voltage drop and blocks the flow of current in the opposite direction. The silicon controlled rectifier, in addition, blocks the flow of forward current until a signal is applied to the control terminal.

How do they differ in electrical characteristics? Fig. 2 holds the secret. The normal silicon controlled rectifier passes large currents in the forward direction with little voltage drop and blocks the flow of current in the opposite direction. The silicon controlled rectifier has the additional characteristic of blocking the flow of forward current as well, until a small signal is applied to the control or third terminal. It then changes characteristics almost instantly to those of a normal rectifier. Control is regained as soon as the voltage is removed or reversed.

Those who have worked with control systems in the past will immediately recognize the similarity of the controlled rectifier characteristics to those of a basic three-element gas power tube such as the Thyratron. With this similarity, the equipment designers have applied the silicon controlled rectifier in Thyratron circuits. Their unique characteristics quickly led to use in circuits in which Thyratrons were not suitable and even some entirely new circuits which were not possible before.

Since the Thyratron is the closest familiar cousin which the silicon controlled rectifier has, look at the advantages it has over the Thyratron:

(1) no warm-up, giving instant availability;
(2) no filament to eventually burn out;
(3) no fragile envelope or critical internal spacings;
(4) no apparent change in characteristics with time;
(5) less than one-tenth the internal power loss;
(6) can be used at much higher frequencies;
(7) physically smaller; and
(8) new circuit possibilities.

On the other side of the coin are two problems which an equipment designer must keep in mind.

(1) Lower voltage ratings. Thyratrons can be operated directly in a 550-volt a.c. circuit. The silicon controlled rectifier is limited at present to 240 volts a.c., unless the circuit is made more complex.

(2) Susceptibility to voltage and current transients. The

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*Applications Engineer, General Electric Co., Salem, Va. From a paper presented at the A.I.E.E. Electrical Equipment Conference for the Textile Industry, Raleigh, N. C.

solution here is intelligent design and adequate prototype testing of new circuits.

For over a year now there have been a number of a.c. alternator voltage regulators operating in various synthetic fiber plants using silicon controlled rectifiers. In these systems a number of small synchronous motors are supplied from a variable frequency alternator. Maintaining proper alternator voltage over the frequency range and as motors are switched on and off, is very important. The fast response and small size of the silicon controlled rectifier enabled the design of a basic voltage regulator able to maintain the proper voltage even under transient starting conditions on a 50 k.v.a. machine in about one cubic foot. Through regulator techniques, alternator voltage was eliminated as a variable in the overall process and, by the use of the silicon controlled rectifiers, the regulation characteristics desired became possible.

Another product already on the market which will find use in the textile field is a packaged, general purpose, fractional horsepower, completely static, adjustable speed d.c. motor drive called Statotrol. This drive is exactly equivalent to the famous and widely used Thymotrol drive which uses Thyratron tubes. Statotrol offers instant starting, a smaller, cooler package, extremely long life, completely encapsulated (sealed) circuitry and lower cost. This unit is presently built through ¾ h.p.

These are just two presently used silicon controlled rectifier applications. Let's look at the total expected impact of this device over the next three to five years. Earlier we mentioned adjustable speed d.c. motor drives. Such a circuit is shown in Fig. 3. The alternating current line voltage is converted into adjustable voltage d.c. by controlling the point on each a.c. wave at which the silicon controlled rectifier is turned on. Speed ranges of eight-to-one are easily obtained. Such a drive can be operated "open loop," that is with a speed drop due to the load which is dependent on the motor characteristics. It can also be made into a "closed loop" speed regulator by the addition of droop compensation or a tachometer generator.

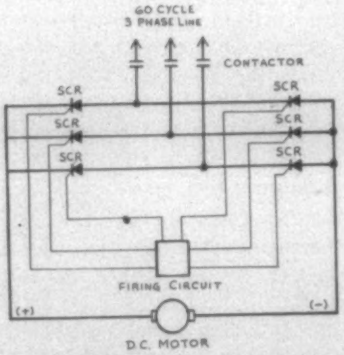

Fig. 3—This is the circuit for an adjustable speed d.c. motor drive. The alternating current line voltage is converted into adjustable d.c. voltage by controlling the point on each a.c. wave at which the silicon controlled rectifier (SCR) is turned on.

An alternator voltage regulator might appear as in Fig. 4. Here the same principal of controlling the average d.c. voltage on the alternator or generator field by "holding off" part of each a.c. cycle is used to regulate the output voltage. A small change in the output voltage causes the field voltage to change as required to correct for deviation. The voltage feedback can be arranged to provide automatic volts per cycle regulation in the case of a variable frequency alternator.

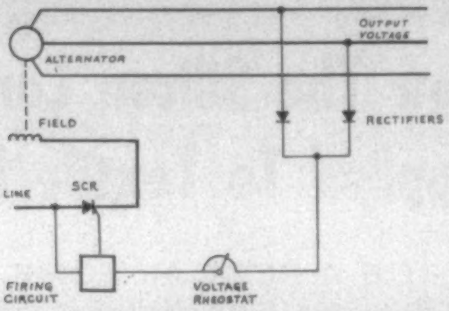

Fig. 4—Here is how an alternator voltage regulator might appear —with the same principle of controlling the average d.c. voltage on the alternator or generator field by holding off part of each a.c. cycle used to regulate the output voltage.

A constant torque adjustable speed d.c. drive has been needed for those plants with d.c. power. This is now possible with the silicon controlled rectifier. Instead of a resistance starter and a motor field rheostat, a silicon controlled rectifier oscillator is placed in series with the motor. A typical circuit is shown in Fig. 5. This circuit turns the d.c. voltage on and off several thousand times per second. By varying the ratio of on-time to off-time, the average d.c. voltage on the motor, and hence its speed, can be varied.

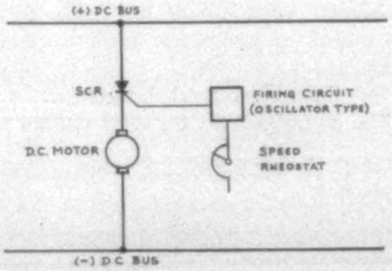

Fig. 5—This is a typical circuit for a constant torque adjustable speed d.c. drive using a silicon controlled rectifier.

A little further into the future we can see adjustable speed packaged a.c. drives. These will combine the simplicity, low cost and lack of commutators of a.c. motors with the variable speed characteristics of the d.c. motor. Such a system might be as shown in Fig. 6. Instead of the large power dissipating resistors normally associated with wound rotor motor speed controls, there are conventional silicon rectifiers and silicon controlled rectifiers. The slip power transferred to the rotor is rectified into d.c. and then inverted back into the a.c. line by silicon controlled rectifiers. This should result in an extremely efficient and low cost adjustable speed drive.

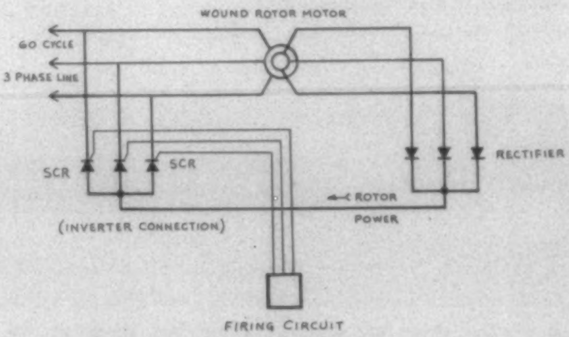

Fig. 6—In the future adjustable speed packaged a.c. drives will be possible with a system such as this.

Effect Of Short Fibers In Cotton On Yarn, Fabric Properties And Spinning Performance

S.R.R.L. DATA SHOWS AN UPPER LIMIT OF 3/8 INCH IS MORE VALID THAN THE 1/2 INCH LIMIT NOW USED

By **JOHN D. TALLANT,**
LOUIS A. FIORI
and
R. J. CHEATHAM*
Southern Regional Research Laboratory,[1]
New Orleans, La.

COTTON is subject to large environmental and varietal variation in its important fiber properties. A single measure of length, classer's length, has long been used as an important criterion of a cotton's spinning value. However, it is well known that two cottons having the same classer's length may have different spectra of length distribution, with one having significantly more short fibers than the other.

The influence of the shorter fibers in the cotton sample on the product quality and processing efficiency has been the source of much speculation but little quantitative examination. This has undoubtedly been because of the great difficulty involved in sorting out and measuring the various fiber length classes by techniques such as the Suter-Webb sorter.

The subject has been controversial and subject to conflicting reports apparently depending upon the manner in which the investigator measured "short fibers." For example, Webb and Richardson *(12, see references at end of article)* reported from an analysis of 766 cottons that yarn properties were definitely affected by the Suter-Webb length coefficient of variation, with the larger coefficients associated with a general deterioration in yarn properties. It may be reasonably inferred that the larger coefficients of length variation indicated to some extent larger amounts of short fibers. Subsequently, using a different measure, the Fibrograph length uniformity ratio, Webb *(11)* in an extensive statistical analysis with other fiber properties concluded that "length uniformity index made only a negligible effect on single strand count times strength product."

Both of these criteria of length distribution suffer from being inherently indirect measures of short fiber content. Consequently, it was decided to use as objective and direct a measure as possible. In 1934, Kohler *(3)* indicated that the "length of slippage" is approximately 8 mm. or slightly more. By this he meant that fibers 8 mm. or less are likely to slip rather than break when a yarn ruptures. Hence, these short fibers could contribute little to strength. With the Suter-Webb array a convenient division point between two cells is ⅜ inch, or 9.5 mm.

Subsequent investigation utilizing a concept termed "effective weight" whereby not only the short fibers but also the tips of all longer fibers are considered unable to contribute to yarn strength has indicated that ⅜ inch is approximately the optimum measure *(4)*. Fig. 1 shows the significantly better correlation of yarn with fiber tenacity (zero gage) obtained for 41 cottons when the effective weight calculated on a ⅜ inch basis is used. Effective weight is cumbersome to calculate and must be considered as only a research tool at present. The remainder of this paper will deal with the short fibers less than ⅜ inches only. However, it is recognized that many investigators are using as a criterion the percentage less than ½ inch. As an aid in conversion, Fig. 2 is shown. The

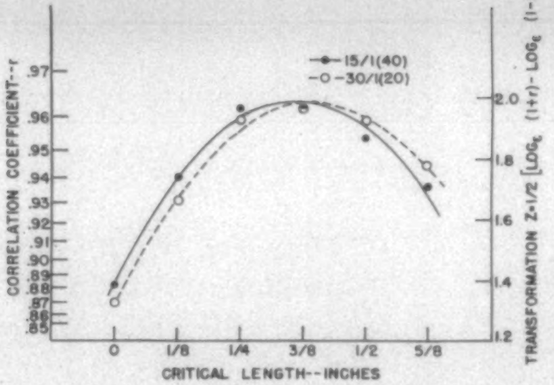

Fig. 1—Correlation of effective weight times fiber tenacity versus single strand tenacity for various critical length bases.

ABSTRACT

EXPERIMENTAL DATA are presented showing that an upper limit of ⅜ inch is more valid than the ½ inch limit now commonly used for evaluating the effect of short fibers on spinning performance. A means of converting from one measure to the other with good accuracy, also, is presented.

Differential ginning is described and some of the pertinent fiber properties obtainable by this technique are given. Of significance is the large change in Micronaire reading as well as short fiber content with successive stages of differential ginning.

Twist-strength curves of yarns spun from cottons differing in short fiber content show that as short fibers increase yarn tenacity decreases but the twist for maximum strength is not affected as long as staple length remains substantially constant. Yarn appearance is shown to be seriously degraded as the short fiber content increases. Perhaps the most serious effect of increases in the short fiber content is shown to be their effect on spinning efficiency. Excessive amounts of short fibers seriously reduce the speed at which a given yarn can be spun with an acceptable ends-down rate.

The deleterious effects of short fibers are shown to affect the physical properties and appearance of the greige bleached, dyed and resin-treated cotton fabrics.

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* Presented at the Conference on Recent Advances in Cotton Utilization Research, May 1-2, 1961, New Orleans, La.

[1] One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture.

J. D. Moore, Spinning Room Overseer of Muscogee Manufacturing Co., Columbus, Georgia, and John Bush, Armstrong representative, talk about cot performance. This frame is equipped with Accotex J-490 cots and NO-7876 aprons. ▶

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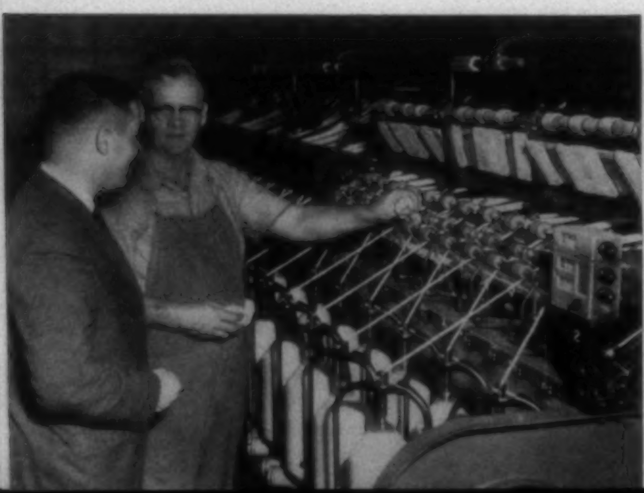
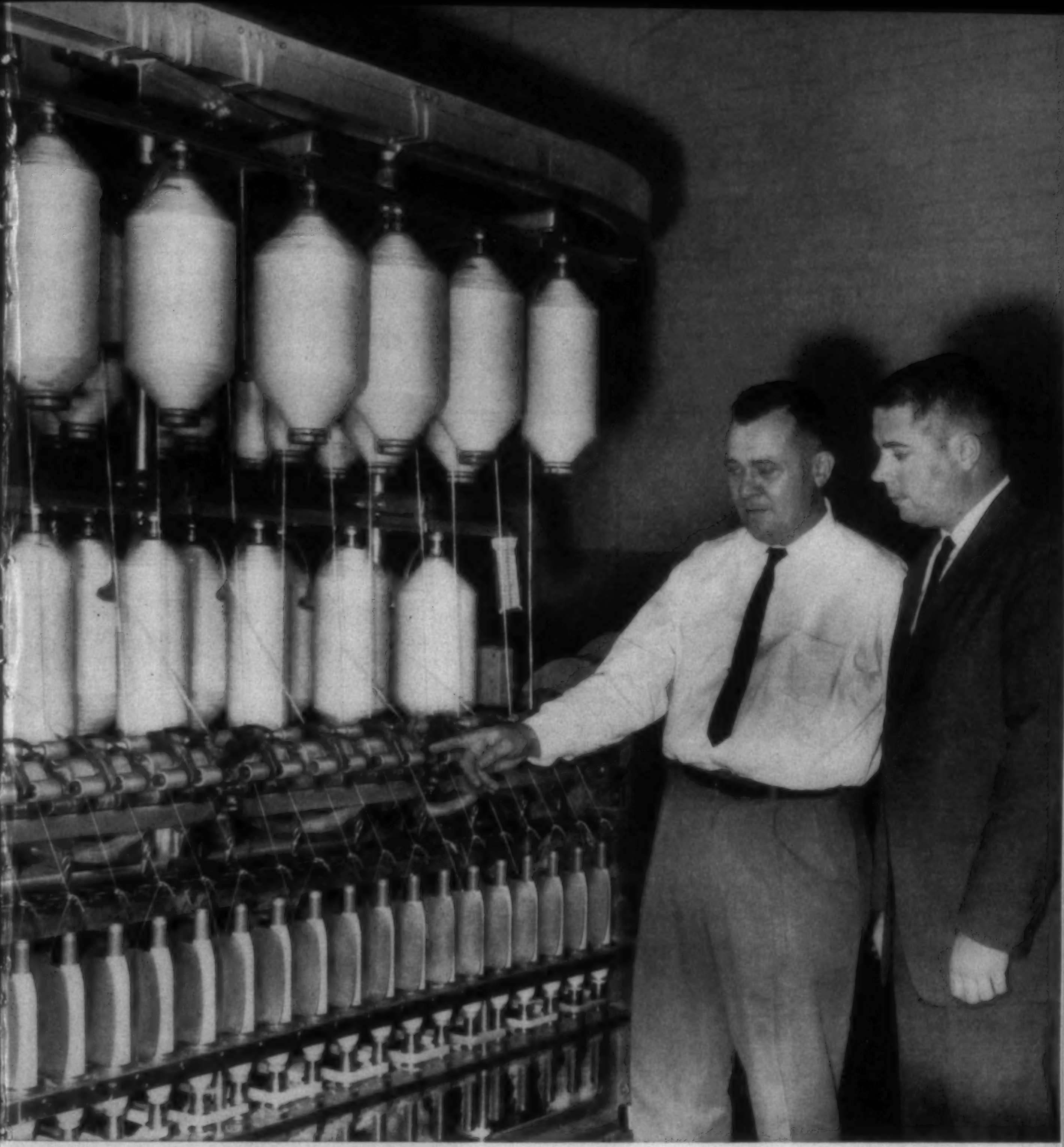
When you specify Accotex products, you also get the benefit of the specialized training and experience of your Armstrong man . . . a man who can make dependable suggestions when you have questions about the selection or performance of roll covers and aprons. Here, for example, you see Armstrong man John Bush working with personnel of the Muscogee Manufacturing Company.

Be sure to call *your* Armstrong man on any roll covering or apron problem. Armstrong Cork Company, Industrial Division, 6508 Davis Avenue, Lancaster, Pennsylvania. ACCOTEX® IS A TRADE-MARK OF ARMSTRONG CORK COMPANY

Bush chats with Joseph Griffin about the special electrolytes in the Accotex J-490 cots that minimize lapping. This frame also uses NO-7876 aprons.



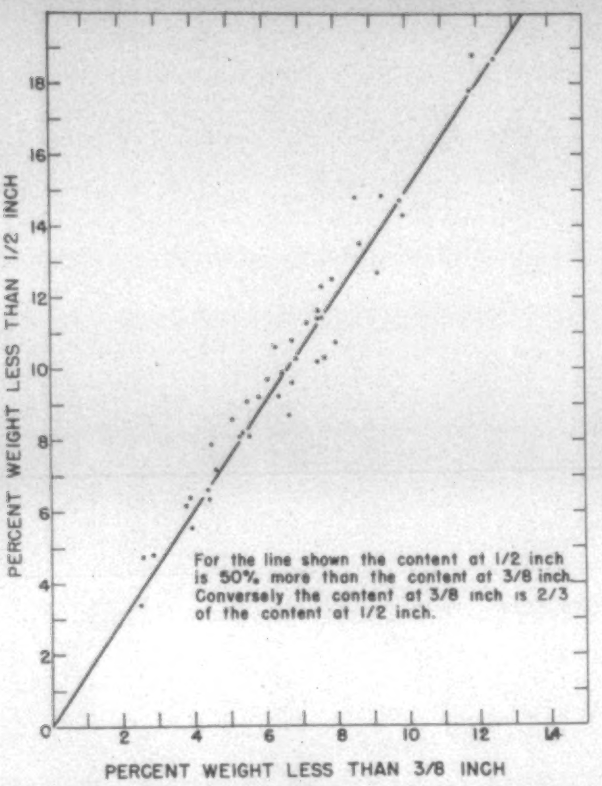
J. D. McCosh is Overseer of Carding at Muscogee. This drawing frame has Accotex J-490 cots and Accotex clearer materials.



Bush is shown in the roll shop with James Payton on the left and William Thomaston on the right. Payton is Asst. Foreman of Carding and Thomaston is Foreman of the Roll Shop.

Armstrong

ACCOTEX COTS AND APRONS



For the line shown the content at 1/2 inch is 50% more than the content at 3/8 inch. Conversely the content at 3/8 inch is 2/3 of the content at 1/2 inch.

Fig. 2—The relationship between short fiber contents at ½-inch and ⅜-inch upper limits.

relationship between the two measures is good and easily remembered.

Experimental Materials

The obtaining of cottons differing in short fiber content, while holding other valuable properties substantially constant, posed several difficulties. Two general techniques were used. One used the addition of cut sliver in varying degrees in cotton of inherently low short fiber content. The other technique used was differential ginning. Fortunately, the conclusions drawn on the effect of short fibers were the same for the two general techniques *(5, 6)*.

The term differential ginning has been used recently to describe a ginning technique that produces cotton fiber samples having considerably different fiber distributions than those ginned in the conventional manner *(2)*.

In one experiment, handpicked Acala 44 seed cotton was ginned in five stages on a late model, standard saw gin operated according to manufacturer's recommendations except that weighed batches of seed cotton were hand fed into the roll box. After filling, the gin breast was engaged for 15 seconds.

A close inverse relationship between fineness and upper quartile length of fiber from a single lot of seed cotton was demonstrated. The effect of differential ginning in separating the available lint into lots of different length, Micronaire readings, and short fiber content is depicted graphically in Fig. 3.

Ginning rate has been superimposed on these data to show the drastic change in rate as the number of ginning stages is increased.

It is significant that regardless of the seed roll weight which increased with each stage, the gin saws in each 15-second ginning period removed about 50% of the lint in the roll box. This efficiency level remained relatively constant while the per saw ginning rate decreased from a high of 10.7 to a low of 4.2 pounds per hour.

A limited investigation was made to determine whether the concept of random breakage as proposed by Byatt and Elting would explain the length distribution actually obtained *(1)*. The results were negative. This is not surprising, since the evidence indicates that differential ginning is not a random breakage phenomenon, but rather one of selective ginning. Further research to determine a satisfactory model for the length distributions obtained by differential ginning is needed.

Differential ginning appears technically feasible and represents a practical method of obtaining cotton with less than average short fiber content at the expense of producing other cotton with a greater than average short fiber content. The economic desirability of differential ginning has not yet been determined and must await additional experimentation and an economic analysis of its effect on the entire cotton industry.

Procedure And Results

The cottons of varying short fiber contents were spun into a range of yarn sizes, from 14/1 (42 tex) to 36/1 (16 tex), and over a range of all practicable twists. Space permits the inclusion of only selected results; however, these are typical of the general findings.

The short fiber content versus single strand maximum tenacity is shown in Fig. 4. The solid line was drawn to the observed data. The dashed line is a calculated curve showing the expected decrease in yarn tenacity with increase in percent short fibers assuming the short fibers contribute nothing to yarn tenacity. (Coincidence was arbitrarily set at 1% short fiber content.) It can be seen that the actual decrease in yarn tenacity is greater than expected from such a simple hypothesis. The fiber tenacity for all samples was approximately the same

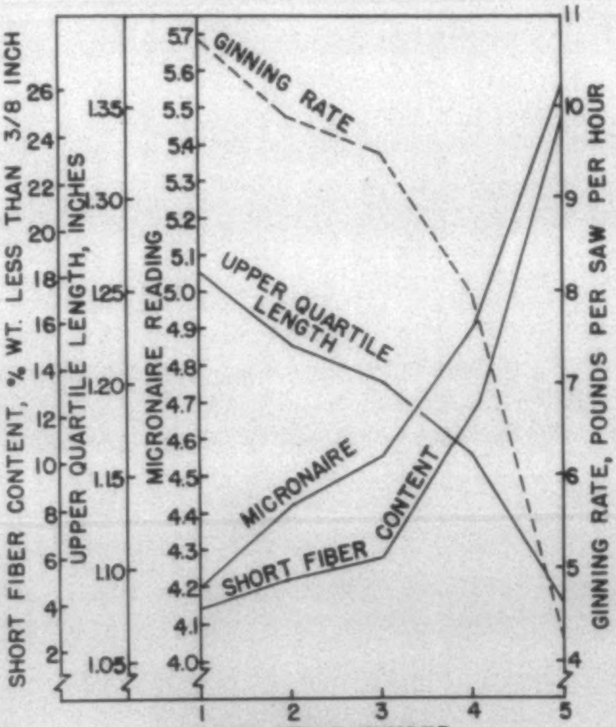


Fig. 3—The effect of differential ginning by five 15-second stages on fiber length, short fiber content and Micronaire reading with ginning rate superimposed.

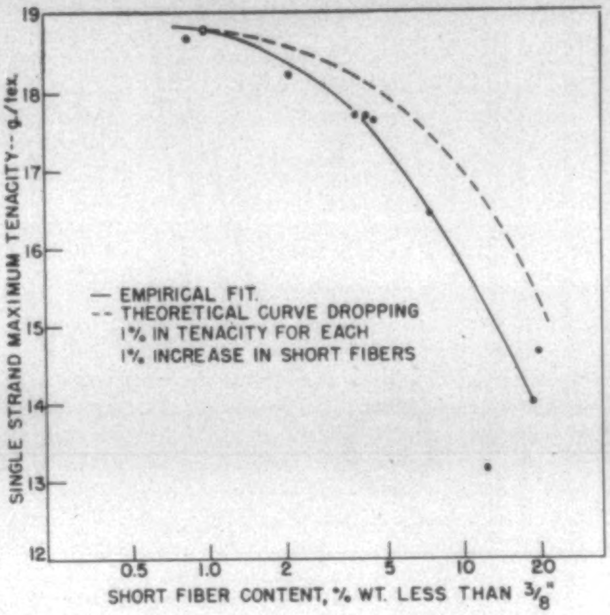


Fig. 4—Single strand tenacity versus short fiber content for Acala 44 cotton.

when measured by conventional fiber bundle tests. The short fibers thus appear not only to add useless bulk to the yarn but also to prevent the working fibers from performing at their maximum potential. The effect is discernible even for small increases at low levels of short fiber content. Decreases in tenacity were greater in relation to increases in short fiber content than could have been expected if the assumption had been made that these fibers were merely inert weight.

Short fiber contents, within the precision available for this determination, do not seem to affect the twist required for maximum yarn strength for a given upper quartile. Thus, it may be inferred that it is the longer fibers which determine the twist for maximum strength. Representative skein twist versus count-strength product curves are shown in Fig. 5 for the experiment in which cut sliver was added to cottons of low short fiber content but different fiber elongation. It might be mentioned that there appears to be no interaction between fiber elongation and short fiber content with respect to the measured yarn characteristics.

Increases in short fiber content, probably because of increased unevenness, cause large decreases in yarn breaking elongation as well as breaking strength. These simultaneous

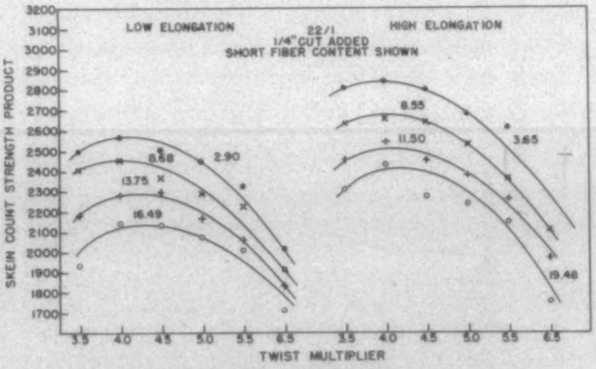


Fig. 5—Typical twist versus count-strength product curves for 22/1 yarn, showing the effect of addition of short fibers (¼-inch cut).

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losses appear more serious when it is recalled that the product of breaking strength and elongation is proportional to toughness or energy required for rupture. Thus, the yarns with the higher short fiber content show a marked decrease in toughness. This decrease amounts to almost 50% between yarns of the lowest and the highest short fiber content. It may be speculated that this effect would be considerably important in the utilization of such yarns in fabrics with resin treatments, which usually entail further strength and elongation losses.

While strength and elongation are very important from the engineering aspect, the appearance of the yarn may be of the major importance in many end-uses where esthetics play a large role. Table I shows the yarn appearance grade over a range of twists and yarn numbers. The conclusion is that the short fiber content seriously degrades yarn appearance but that the deleterious effects may be mitigated by allocating the higher short fiber content cottons to the coarser, higher twist yarns. For example, if only C grade or above is acceptable, the 13% short fibered cotton may be utilized in the coarsest yarn at the highest twist while it requires the 5% short fiber cotton to produce the acceptable level for the finest yarn at the lowest twist.

Table I—Yarn Appearance Grade As Affected By Short Fiber Content Over A Range Of Twists And Yarn Numbers

Nominal Short Fiber Content	14/1 Yarn			22/1 Yarn*		36/1 Yarn		
	Twist Multiplier							
	3.50	4.50	5.75	3.50	4.50	3.50	4.50	5.75
% Wt. Less Than ⅜"								
5	B	B+	B+	B	B+	C+	B	B
8	B	B	B	C	B—	C—	C	C+
10	B	B—	B—	C+	C—	D+	C	C+
13	C—	C—	C	D	D	**	D—	D
15	D+	D+	C	D	D	**	D	D
19	D	D	D	**	D	**	**	**

* 5.75 twist multiplier not spun due to insufficient material

** Impractical to spin due to excessive ends-down rate

One of the dominant properties associated with the utilization of cotton is the spinning performance available from a given lot of cotton. However, sufficient amounts of cotton often are not available to determine quantitatively the effect of short fibers on spinning efficiency since the measurement of this highly important property by spinning 5, 10 or more thousand spindle hours is time consuming and requires quantities which often exceed those available in experimental cottons. Therefore, it was desirable that a shorter yet efficient procedure for determining the ends-down rate be developed.

From the variance estimates of the previous experiments *(9)* it was indicated that where the data are recorded each 15 minutes, a three-hour run of about 720 spindle hours would allow the ends-down rate to be determined within ± 30% at the 95% confidence level *(7)*. For cottons spinning outside the limits of approximately 20 to 150 e.d.p.t.s.h., control chart "no-go" criteria were established to end the test after about one-half hour of spinning, thus conserving cotton and time.

To define the curve showing the effect of speed for a particular cotton at a particular yarn number and twist multiplier, at least three points on the curve were obtained. The latter test might consist of as little as 120 spindle hours. No test was run at spindle speeds of less than 9,000 r.p.m. The results are summarized in Figs. 6 and 7 and show the marked effect of short fiber content and spindle speed on end breakage. The dotted lines at 20 and 150 e.d.p.t.s.h. indicate the approximate limits of the "go" region of the experimental procedure. The line at 50 is presented to aid the reader in taking intercepts at a reasonable level of spinning efficiency.

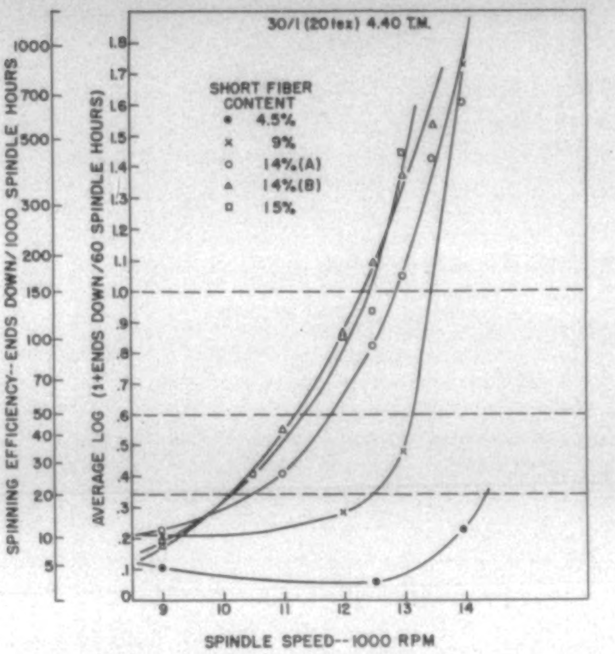


Fig. 6—The effect of spindle speed on spinning efficiency for the five levels of short fiber content—30/1, 4.40 T.M.

The ends-down rate for increasing short fiber content cottons is seen to become divergent as spindle speed is increased. Thus, for the 30/1, 4.40 T.M. yarn, all of the short fiber levels spun exceptionally well at 9,000 r.p.m. However, when spindle speed was increased, the end breakage rates of the yarns spun from the cottons with higher short-fiber contents increased exponentially and rapidly became unspinnable, while the end breakage rate of the 4.5% cotton remained below the

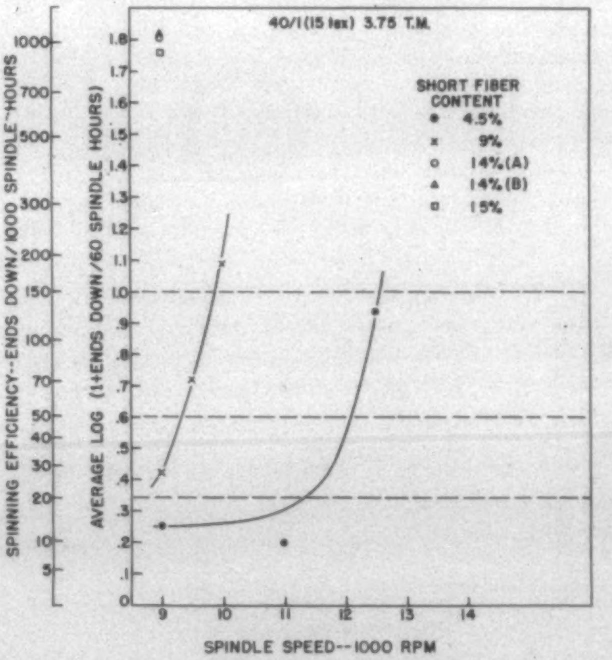


Fig. 7—The effect of spindle speed on spinning efficiency for the five levels of short fiber content—40/1, 3.75 T.M.

lower experimental design limit of 20 e.d.p.t.s.h., even at spindle speeds of 14,000 r.p.m.

On the other hand, even at the low speed of 9,000 r.p.m., the three cottons containing over 10% short fibers could not be spun into 40/1 yarns at filling twist without impractically large end breakages.

While these experiments were conducted only on carded yarns, it seems probable that had the high short fiber content cottons been combed to reduce their level to approximately that of the low short fiber content cottons, comparable spinning performance might be expected.

Effect On Fabrics

Since most yarns produced are ultimately woven, it seemed desirable to investigate the effect of short fibers on fabrics *(8)*. A typical 80x80 print cloth construction was used to obtain information on the effect that short fibers have on both greige and finished fabrics. Cottons varying in short fiber content from about 5% to 13%, but having other important fiber properties approximately equal, were processed into a print cloth, portions of which were bleached, mercerized, dyed and resin-treated.

The data showed that increases in the short fiber content of either the constituent warp or filling yarns are detrimental to virtually all fabric properties. Furthermore, the detrimental effects of increases in short fiber content carry through all stages of finishing, including resin treatment. The magnitude of differences, for example, in the resin-treated state approximates that found in the greige state. Furthermore, there does not appear to be any significant "leveling" of the yarn strength differences caused by variations in short fiber content when these yarns are carried into the greige or finished fabric state.

Not only were objectively determined values, such as strength, flex abrasion and tearing strength adversely affected, but subjective qualities, such as appearance, smoothness and hand were similarly degraded by increases in short fiber content.

These subjective properties may be of dominant importance in the utilization of a fabric in many end-uses, but unfortunately, such properties are not amenable to quantitative presentation and tabulation. Increasing short fiber content in either warp or filling yarn resulted in a degradation in general appearance and feel of the fabric in all treatments.

Conclusion And Summary

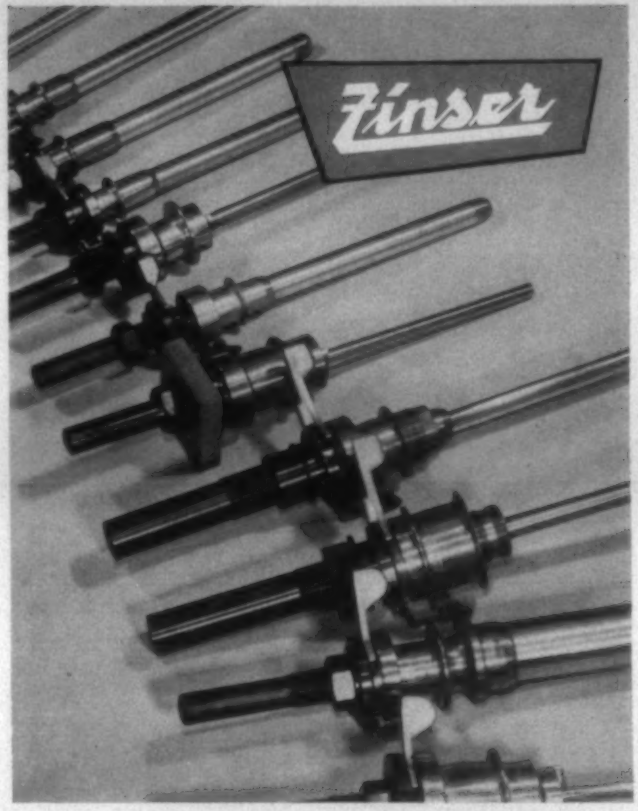
Where short fibers are defined as those fibers three-eights-inch and shorter and hence those not likely to break or rupture when the yarn ruptures, it appears that the following conclusions may be drawn.

(1) Increases in short fiber content degrade yarn strength, both skein and single strand, yarn appearance, fabric appearance and virtually all other properties.

(2) Increasing levels of short fiber content, while decreasing the maximum strength available from a cotton, do not appear to affect the yarn twist required for maximum strength.

(3) Spinning tests show that the relationship between spinning efficiency and short fiber content, for print cloth yarns (30/1 and 40/1), is complex and strongly influenced by spindle speed, yarn size and yarn twist. Increases in short fiber content, in general, seriously decreases spinning performance. Further, it was found that once a cotton of a given level of short fiber content exceeds an ends-down rate of

(Continued on Page 70)



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How To Design And Lay Out Multiple Fabrics

DOUBLE CLOTH CONSTRUCTION RESULTS IN A HEAVIER FABRIC THAN IS PRACTICAL WITH SINGLE TEXTURE

By E. B. BERRY

PART 2

DOUBLE cloth is defined by *Callaway's Textile Dictionary* as: "A compound fabric in which a face cloth and a back cloth—each with its own warp and filling—are combined during weaving. The two cloths may be bound together by using certain threads of the face or back or a separate set of binder threads may be used. Very often the face cloth is quite different from the back cloth in weave, yarns, threads per inch, color pattern, etc. The primary object of such cloths is to produce a heavier cloth than could be done in a single texture without spoiling the fineness and weave of the face cloth. Used for coatings, blankets, upholstery cloths, industrial fabrics like belting, etc."

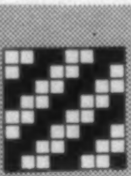


Fig. 1

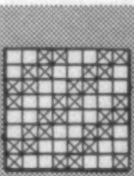


Fig. 2

The following are steps in the layout of a design for the simplest double cloth. Fig. 1 is the face weave which is a 2/2 right hand twill. Fig. 2 is the back weave. It, too, is a 2/2 right hand twill when seen from the face, but when turned over, and seen on the back, it is a left hand twill.

The arrangement of face ends to back ends and face picks to back picks must be determined at this point. In its purest form, double cloth has the same number of ends per inch and picks per inch in both cloths, with the same yarn numbers in both layers. The easiest way to express this is one face and one back in both warp direction as well as filling direction. This does not mean a pick and pick loom is required. The filling is the same in both layers, but one pick is thrown in the face and then the next is thrown in the back.

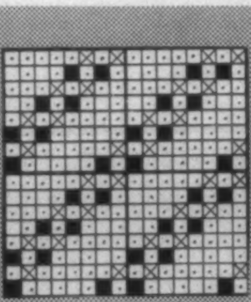


Fig. 3

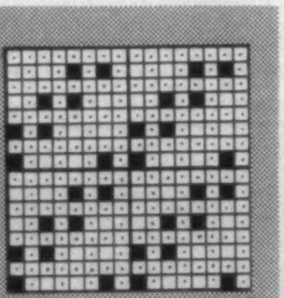


Fig. 4

Fig. 4 illustrates the one face, one back layout, with the face weave of Fig. 1 painted on face ends and face picks. The total here is 16 ends × 16 picks. This face weave repeats on 4 ends × 4 picks which, with the arrangement of 1 face-1 back, would be 8 ends × 8 picks. The layout shown is twice that, for the two fabrics are to be stitched together in an 8 harness satin order, and will require 8 face ends × 8 face picks. Thus, 16 ends × 16 picks are required for the total weave.

In Fig. 3, the back weave is added. This weave is painted on back ends and back picks. Should this weave be pegged and woven on a dobby loom, the result would be a 1 up-1 down, 1 up-5 down, 45° right-hand twill. The loom does not know we want to make this fabric into a double cloth.

Stitching Layers Together

The next step is to separate the two layers and make true double cloth. This is done by raising face ends over back picks, as seen in Fig. 5. If this weave were pegged, and woven on a dobby loom, the result would be a two-layer fabric, but it would be a pillow tube, for the cycling of the filling, one face, one back, will produce a tube.

It is necessary to stitch these two layers together. This can be done in any one of three ways.

1. Raiser Stitching
2. Sinker Stitching
3. Extra End Stitching

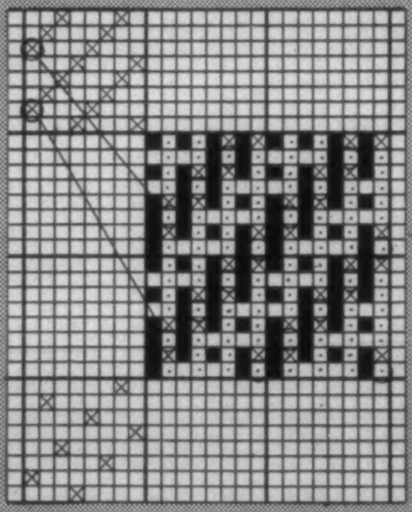


Fig. 5

Raiser Stitching

Raiser stitching means that certain back ends are raised over certain face picks, to the end that the two layers of fabrics will be bound together, while they are being woven. We do not want this binding to show, therefore there are only certain places that the stitching may be done. There are two rules to be followed:

(A) Raise a back end over a face pick next to a raiser of the back fabric. When the back end is raised, it must bind the two layers together, but must not destroy or disturb the back weave. In Fig. 6 (a), one back end is raised over a face pick. The back weave is not disturbed; the raising is done next to a raiser on the back. In Fig. 6 (b), the back weave is ruined; the raising is not done next to a raiser on the back. Fig. 6 (c) and (d) are acceptable; both are raised next to a raiser on the back. (Raisers and sinkers in both layers are always expressed from the top of the fabric.)

(B) Raise a back end over a face pick, between two raisers of the face fabric. The back end that is to bind must not show from the face, even though it must be over a face pick to stitch. In order to cover the point where the stitching occurs, it must be between two raisers on the face. The end that is raised has a greater distance to move, therefore, it will be tight and tend to pull down on the face pick at the point of binding. The two ups on either side of this spot will cover over the raised ends and the stitching will not show.

Just how many stitching points are to be used will be governed by how many are available and the effect desired in the cloth.

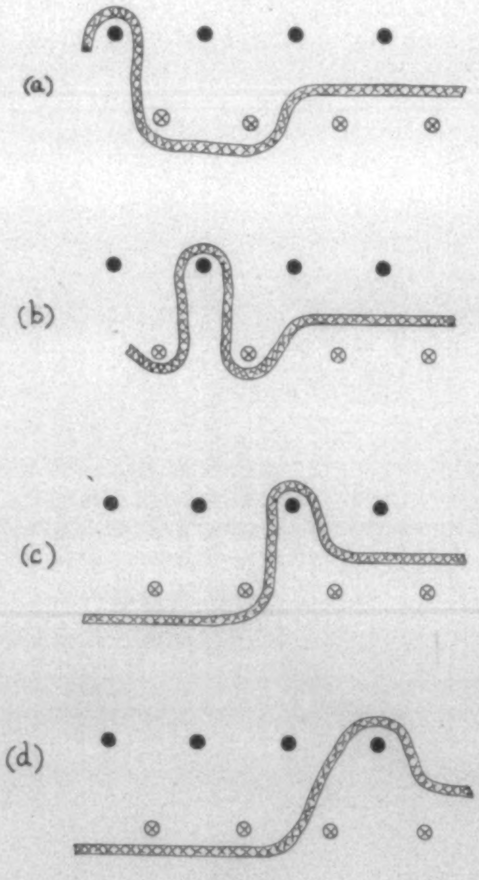
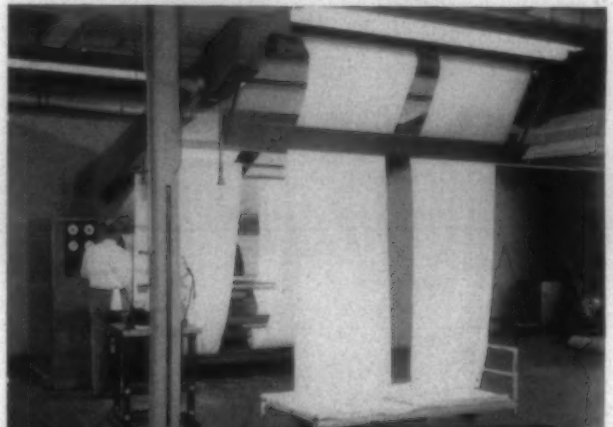


Fig. 6

Pressure Controlled Napping



30 Roll Double Acting Hi-Torc Napper napping two strands of cloth.

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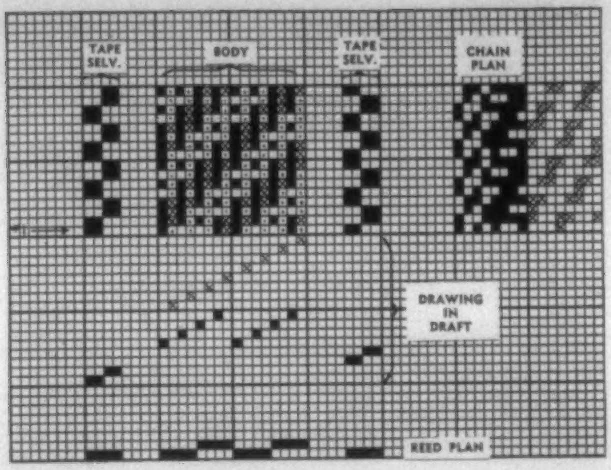

Fig. 7

In Fig. 5, every back end is tried over every face pick, and the approved places are lifted out, and placed in the upper left hand corner. These represent the points when the stitchings meet the requirements of (A) and (B) above. In this case, there are many, and if all were used, a puckered twill effect would result. Each binding point would not show, but the results of all these bindings would create a quilted twill effect. This is not desired.

To cut down on the number of binding points, half of them can be eliminated. The ones that are retained are shown in the lower left hand corner of Fig. 5. This is now an 8-harness satin weave. Fig. 7 shows the completed weave. The body will require 12 harness, 4 for the face weave which was not altered due to the binding, and 8 for the back weave which was changed because of the 8 harness satin stitching. The reed plan calls for 4 ends per dent; 2 for the face and 2 for the back. This does not crowd because there are two layers or planes of ends.

A tape selvage is shown. It is important that the weave in the selvage be opened up to allow for more diameters of filling. The back picks weave with the back ends to form a medium weight fabric. The face picks weave with the face ends to form a medium weight fabric. At the selvage both face picks and back picks weave with the same selvage ends. Unless the weave is opened up to allow for all these extra yarns, a puckered selvage would result.

Sinker Stitching

Sinker stitching means that certain face ends are lowered under certain back picks, so that the two layers of fabrics will be bound together, while they are being woven. We do not want this binding to show, therefore, there are only certain places that the stitching may be done. There are two rules to be followed:

(A) Sink a face end under a back pick next to a sinker of the face fabric. When a face end is lowered, it must bind the two layers together, but must not destroy or disturb the face weave. In Fig. 8 (a), the face end is lowered under a back pick. The face weave is ruined; the sinking is not done next to a sinker on the face. Fig. 8 (b), (c) and (d) are acceptable; all are lowered next to a sinker on the face.

(B) Sink a face end under a back pick between two sinkers of the back. The face end that is to bind must not show on the back, even though it must go under a back pick to stitch. In order to cover the point where the stitching occurs, it must be between two sinkers on the back. The end that is lowered has a greater distance to move, therefore, it will be tight and tend to pull up on the back pick at the point of binding. The two downs on either side of

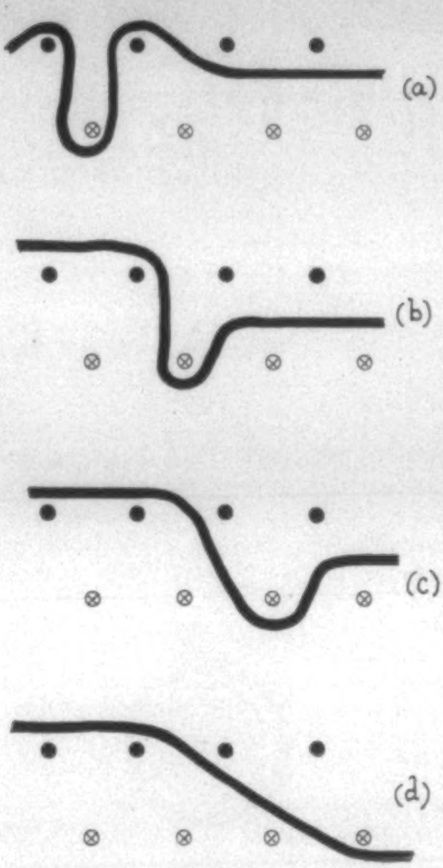

Fig. 8

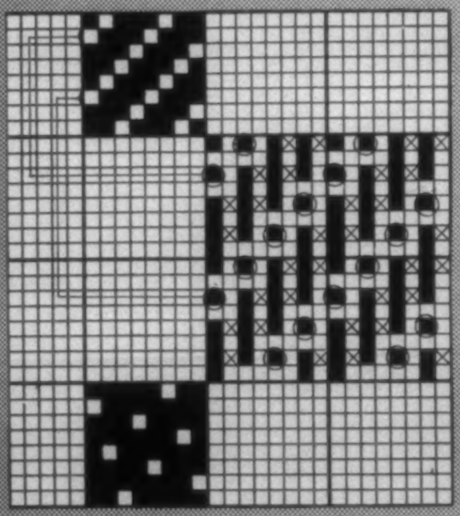

Fig. 9

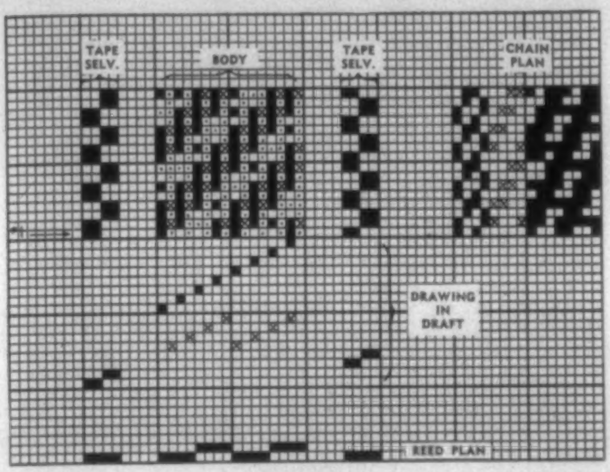

Fig. 10

this spot will cover over the lowered end, and the stitching will not show.

The exact number of stitching points will be governed by how many are available and the effect desired in the cloth. In Fig. 9, every face end is tried under every back pick and the approved places are lifted out and placed in the upper left hand corner. These represent the intersections where the stitching points meet the requirements of (A) and (B) above. In this case, if all were used, a puckered effect would result which would be objectionable.

To cut down on the number of binding points, half of them can be eliminated. The ones that are retained are shown in the lower left hand corner of Fig. 9. This is now an 8-harness satin weave. Fig. 10 shows the completed weave. The body will require 12 harness, 4 for the back weave which was not altered due to the binding, and 8 for the face weave, which was changed because of the 8-harness satin stitching. The reed plan calls for 4 ends per dent, the same as in raiser stitching.

Extra End Stitching

The third means of stitching the two layers of fabric together is extra end stitching. There is no rule as to the number of ends that will be used for binding, nor how often these ends should stitch the two layers together. An illustration will show one method of using the extra end stitching. Fig. 11 shows the face weave which is a 3/3 45° right hand twill. Fig. 12 is the back weave which is a 2/2 45° right hand twill. The least common denominator for these two weaves is 12 face ends and 12 back ends or a total of 24. The fabric designer decided to use 2 extra ends of stitching in these 24, to make a total of 26. Since there is no extra filling for stitching, the total picks in one repeat is 24.

Fig. 13 shows the completed weave. On the left hand side

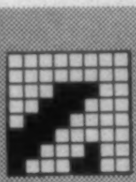

Fig. 11

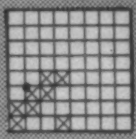

Fig. 12

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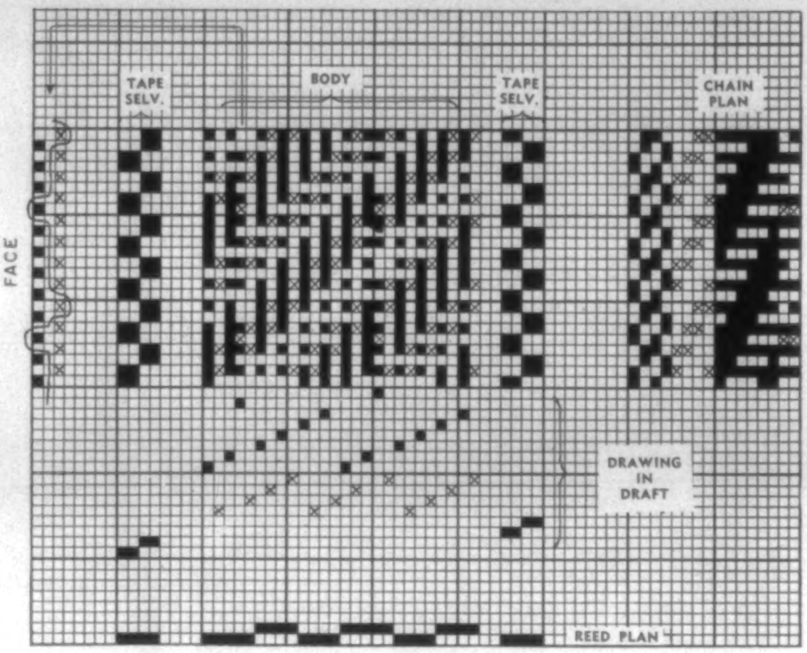

Fig. 13

of the weave is the cross section of one of the extra ends used for stitching. It will be seen that this extra end floats between the two layers most of the time. When this is done, it is raised between 2 raisers of the face weave, so it will not show.

Twice in a repeat it is lowered to bind the bottom layer. When this is done it is lowered between 2 sinkers of the back weave so it will not show.

The drawing in draft is on 16 harness. Four are used for the tape selvage, and are placed on the front harness. Four more are used for the back weave and are placed next. The face weave requires six harness, which follow in sequence. Each stitching end is different so two more are required for these ends.

The reed plan is 4 ends per dent for the body, exclusive of the binding ends. Where these appear, they are added to the dent containing the adjacent face and back ends, making a total of 5 ends per dent.

A fabricator of raincoats may contact a weaving mill and ask for samples of cloth to be woven using the double cloth principle. This customer wants a 2/2 right twill weave on the face and a 3/1 left twill on the back, as seen from the back. This will be woven as a 1/3 right twill from the top. The face is to be a solid color, while the back is to be a woven plaid. When the fabric is made up into the raincoat, the plaid will be on the inside. Extra inches will be allowed in the sleeve length, and when the fabric is turned back to create the cuff, the plaid back will show, forming a "self cuff." The same idea applies to the collar.

Another point in having the plaid on the inside is psychological. When the shower is over, which necessitated the use of the raincoat, the garment is opened many times. With the plaid showing, there is a much brighter effect, and this will tend to raise a person's spirits after the shower.

At the loom, however, this fabric will be woven with the plaid side up as it is much easier to match the pick and check the pattern, when the plaid is the face.

A typical construction is: 36", 1.60 yd., 112 × 84, 30/2 × 15/1 with 13% warp contraction and 7% filling contraction. The sley and picks are for both layers, or 56 × 42 in each layer. If this were only one layer it would have a K_1 of 28.9 $\left\{\frac{112}{\sqrt{15}}\right\}$ and a K_2 of 21.7 $\left\{\frac{84}{\sqrt{15}}\right\}$ This would be impossible to weave. With two layers however, it has enough draping qualities to be used for a raincoat. The pattern for the plaid fabric is as follows:

Warp— 2 blue
16 yellow
2 blue
40 red
Filling— 2 blue
12 yellow
2 blue
28 red

The plain fabric is to have a solid brown warp with white filling. This will make a total of four colors each in both warp and filling.

On the loom beam the pattern will be:

1 blue
1 brown } 2×

1 yellow
1 brown } 16×

1 blue
1 brown } 2×

1 red
1 brown } 40×

This is done, because the weave is arranged 1 face end-1 back end. If the same idea (1 face-1 back) is carried into the filling, a pick and pick loom would be required. The price of this fabric would never justify such expensive weaving. In order to overcome the high cost, the filling is arranged 2 face-2 back, which will make the filling box chain pattern as follows:

2 blue
2 white

2 yellow
2 white } 6×

2 blue
2 white

2 red
2 white } 14×

Even with the high number of yellow picks and red picks,

Box Plan			6x				14x	
1st box red							2	
2nd box white		2		2		2		2
3rd box yellow			2					
4th box blue	2				2			

Fig. 14

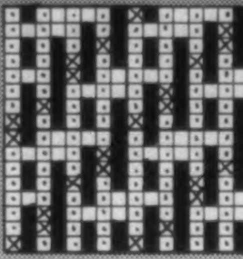

Fig. 15

a multiplier cannot be used, for after 2 picks of any color is woven in the plaid, it must be followed by 2 picks of white in the plain fabric.

As can be seen, white separates each color, so white should not be put in the first or fourth box. A practical box plan is seen in Fig. 14.

With this layout, the only skip is from the blue to white, and that occurs only twice.

In the weave, the filling arrangement of 2 face-2 back must be used and this is seen in Fig. 15.

1961 National Convention Of A.A.T.C.C. Set For Sept. 27-29 In Buffalo, N. Y.

The American Association of Textile Chemists & Colorists will hold its 1961 national convention September 27-29 at the Hotel Statler-Hilton, Buffalo, N. Y. Pre-registration forms for reservations and accommodations have been mailed to all A.A.T.C.C. members, and program details will be announced in late August. Hosting this year's meeting will be the association's Niagara Frontier Section. William H. Leyking, Allied Chemical Corp., Buffalo, is convention chairman, with Nicholas J. Mohoruk, Hamilton Cotton Co., Hamilton, Ont., Canada, serving as vice-chairman. Convention bureau headquarters have been established at 155 Franklin Street in Buffalo.

First Quarter Woolen And Worsted Production Drops 14% Below 1960

Woolen and worsted fabric production during first quarter 1961 was 63.8 million finished linear yards, 14% below output for first quarter 1960 but 6% above fourth quarter 1960 output.

Production of women's and children's clothing fabrics at 36.2 million finished linear yards was 4% above fourth quarter 1960 but 8% below the first quarter 1960 level. Men's and boys' clothing fabric production increased 13% from the previous quarter's level and was 22% below first quarter 1960 output.

Four Southern states (Georgia, the Carolinas and Virginia) accounted for approximately half of the national production total during the period. Georgia led with 10.6 million yards followed by South Carolina with 9 million, North Carolina with 6 million, Virginia with 2.8 million.

The New England states accounted for 26.9 million yards, with Massachusetts leading the way with 8.4 million followed by Maine and New Hampshire with 7 million each, Rhode Island 2.3 million, Connecticut 1.3 million and Vermont 874 thousand.

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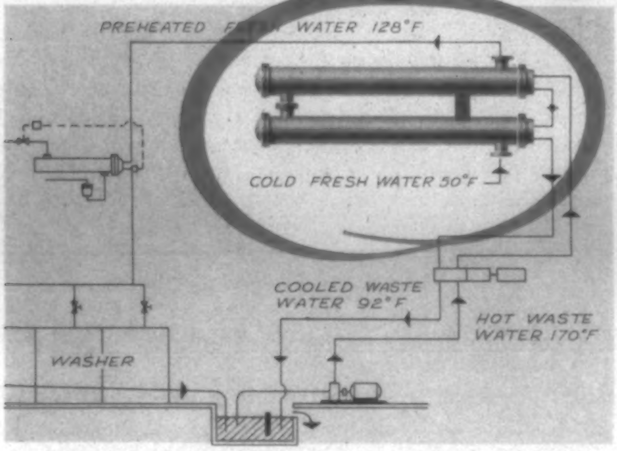

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Spinning, Winding, Creeling Discussed By T.O.E.G.

TOPICS RANGE FROM PIEDMONT SPINNING FRAME RESULTS TO SPINNING TAPES, BLOCK CREELING AND SPOOLING

WHEN are spindle brakes necessary? Are nylon tapes superior to cotton? What sort of results are Piedmont spinning frames giving?—These and other questions highlighted the second portion of the meeting of the Textile Operating Executives of Georgia, April 22 at Georgia Tech in Atlanta. The first part of the meeting (T. B. July '61) dealt exclusively with opening, picking and carding.

Piedmont Spinning

Question No. 15—Give your experience with Piedmont spinning.

One mill said that it had 2½ and 3-inch rings on its frames which had traveler speeds of 6,000 feet per minute on varying yarn numbers. Thus far this mill has had no ridging problems or trouble with wind-down collars breaking on its frames. It also reported that paper bobbins do not stick on the spindles and they have one balloon control ring each.

A second mill has 32 Piedmont frames in production. Technical data on these include: three-inch ring; 6,600 to 8,200 r.p.m. spindle speed; traveler speed equal to 5,200 to 6,400 feet per minute. The machines are running 6s to 13s from 15/16-inch and 1 1/32-inch staple cotton. It also reported no trouble with ridging but has had several wind-down collars to break. Paper bobbins haven't given any trouble and the mill seems to get the same results with either one or two balloon rings.

Spindle Brakes

Question No. 16—At what spindle speed and package size is it expedient to use spindle brakes? Have you found any other means of stopping bobbins without brakes?

It was found from the answers sent in from the mills on this question, that spindle speeds from 10,000 r.p.m. and up required brakes along with high twist warp yarns and extremely soft packages. There was one exception to this rule, as one mill reported that it used brakes on its spindles at 3,996 to 5,651 r.p.m.

All of the mills reporting indicated that they did not know of any other manner of stopping spindles other than with brakes or by hand.

Top Drive Spindles

Question No. 17—What has been your experience with top drive spindles?

Mill A: We are running our spindles 10% higher and lubricate them once a year. Our bearings are SKF and are flushed when the spindles are oiled. Our doffers remove chokes at 8 and 24 hours, depending on yarn number.

Mill B: Our spindle speed is 10,000 r.p.m. and we use roller bearings. Velocite E spindle oil is flushed and replaced once per year. Chokes are removed once or twice per week, depending upon yarn number. There has been wear on spindle blades and at the contact area of the bobbin.

Other mills running a variation of yarn numbers and spindle speeds have not experienced considerable wear on parts or an increased number of chokes while using the top drive spindles. Generally spindle speeds can be increased by the use of this drive.

Spinning Tapes

Question No. 18—What width and type spinning tape and method of fastening do you use? If you are using a synthetic tape, give spindle speed improvement; average tape life; whether tapes are burning on spindles using brakes; tapes loading and method of cleaning; and any decrease in power requirements.

Mills	Tape Width	Type Tape	Spindle Speed Improvement	Tape Life	Tapes Loading	Cleaning Method	Power Decrease
A	¾" ⅝"	cotton	———	———	———	———	———
B	¾"	cot./syn.	none	six months	bad	saw blade	none
C	⅝"	nylon	higher	———	better	card clothing	decreased
D	⅝"	nylon	constant	longer	more	———	none
E	⅝"	nylon	———	———	less	———	———
F	⅝"	nylon	none	26% longer	more	wire brush	none
G	⅝"	nylon	none	———	more	———	decreased

All mills reporting the use of nylon or nylon/cotton tapes bonded them rather than sewing. One mill using cotton tapes sewed them.

Cost-Spinning Supplies

Question No. 19—What unit do you employ to express the cost of ordinary spinning supplies, and what cost do you consider as "normal"? How do you arrive at your unit supply cost?

Mill A: Our spinning supply cost is figured on pounds of cloth produced. It varies between .4 cents and .5 cents per pound. Divide money spent for supplies by pounds cloth produced.

Mill B: 13 cents per 1,000 spindle hours; experience.

Mill C: (a) Spun pounds. (b) Normal cost is $.0024 per pound. (c) History.

Mill D: We base our supply cost on the production pounds and we average .327 cents per pound.

Mill E: Spinning supplies are expressed as cost per pound of production. Budgets are based on past experience and expected production data. Standard supply cost per pound is .38 cents.

Spinners' Duties

Question No. 20—Do you have your spinners on a fixed time cycle? Are any of the spinner's

cleaning duties given to clean off hands? What advantages have you derived from this system?

Out of five mills answering these questions, three said that their spinners were not on a fixed cycle. The other two had the system in operation. One mill indicated that its spinners did all of the cleaning. The other two reported that spinners did all of the cleaning except for picking rollers.

The two mills reporting fixed cycles said that their spinners did no cleaning. All of this was done by clean off hands and that it saved money due to lower wages paid these people as low-skilled labor. Cycles were varied according to yarn numbers being run in each of the plants.

Creeling

Question No. 21—With large package roving (12x6 and larger) what has been your experience with: (a) Block creeling? (b) Creeling on narrow gauge frames? What type creel have you found most effective in eliminating adjacent roving bobbins from touching?

Mill A: (a) We experimented for one month, block creeling one 216 spindle warp frame, making 8.50's yarn from a 44-ounce package of 12x6.72 hank roving. We creeled while the frames were in production and the creeler did not twist off roving pieces, or piece any ends. Due to variation in slubber doffs and spinning production, creel running time varied from 22 hours and 45 minutes to 23 hours and 17 minutes. This 32 minute variation would play havoc with any schedule creeling on a large scale. Also, due to this variation, several large roving pieces would be left in the creel, while other bobbins in the same frame would run out. Our minimum creel time was .17 minutes per bobbin and throughout the period of one month's testing average creel time was .20 minutes per bobbin. Roving waste on this frame averaged 2.56% due to spinning breakbacks and slubber doff variation. (b) Our roving package size is 14x6½ on 4½-inch and 3¼-inch gauges. We run a 4 over 0 creel. On 4½ gauge we have adequate space. On 3¼-inch, we would have plenty of room if we ran 4 over 2, but we feel this would make the creel too high for our spinners to reach with heavy roving. We lack about one inch on 4 over 0 having enough room, so we stagger the roving to compensate for this shortage.

Mill B: We have not found an acceptable method of block creeling. We are using 12x6½ roving on 2¾-inch frames by using a 4 over 2 open air creel. Our bobbins are not rubbing in this creel. In fact, it is designed to take 14x7 bobbins.

Mill C: We have tried block creeling, but due to the variation in our yarn numbers, it is not satisfactory for our plant.

Mill D: (a) We do not use block creeling on our large package roving. (b) We have found that the largest package which we can effectively run on our narrow gauge frames (2¾-inch gauge), with a conventional creel, is 12x6. We have not tried different types of creels on these frames. On our large package frames (4-inch gauge, 14x6½ roving) we use the open air type creel. This has been very satisfactory on these frames. The open air creel is possibly a solution to the problem of large package roving on narrow gauge frames.

Mill F: (a) No. (b) We use a 12x6½ package on a 2¾-inch gauge frame. We have an umbrella creel designed by us to accommodate this and have not had any trouble with roving bobbins touching each other.

Mill F: We run 14x6½, .05 hank roving. (a) Do not block creel. (b) Umbrella creels have proven satisfactory in our set-up.

B C Spoolers

Question No. 22—Compare the results attained with the new comb-type snick plate blade with the conventional blade on Barber-Colman spoolers.

The mills reported that more gouts and slubs are removed with the newer blade. One mill reported a 39% increase, while others reported greater removal of these defects. As a standard practice, the mills reporting opened the comb-type blades more than on the conventional blades. Blade life was estimated by one mill at 20 years, while another had been running them for five years without signs of wear.

Question No. 23—When spooling synthetic blends on Barber-Colman spooler, at what speeds do you wind? State blend, yarn number, and spinning bobbin build and size.

Mill A: We spool synthetic blends at 1,000 yards per minute, 12½s yarn made with a 2¼-inch ring and combination build.

Mill B: 750 yards per minute. 10s to 20s viscose rayon, 10-inch bobbin combination build.

Mill C: 17s nylon, 65% cotton and 35% nylon—1,250 yards. 22s nylon, 60% cotton and 40% nylon—1,250 yards.

Mill D: 12% nylon and 88% cotton, 9s yarn, 10-inch bobbin, warp wind—900 yards per minute. 25% nylon and 75% cotton, 14.25s yarn, 10-inch bobbin, warp wind—1,200 yards per minute. 50% nylon and 50% cotton, 14.25s yarn, 10-inch bobbin, warp wind—1,200 yards per minute.

Quality Control Spoolers

Question No. 24—Have you had any trouble with yarn on paper tubes sloughing at the spooler? If so, please advise: (a) corrective measures taken to overcome this fault; and (b) size, type of build, and distance from top of bobbin to thread eye of spooler.

Mill A: To help overcome sloughing at spooler we: (a) oil lifting rods three times per week; check for loose cams weekly; and check build of bobbin and strokes weekly. (b) We have 2¼ and 2½-inch rings, combination build and the thread eye is 1¼-inch from top of bobbin in spooler pocket.

Mill B: Yes. (a) All loose motion in builder removed; anti-friction Pittman roll; all cross shafts and coggles reworked; correct taper at top; and correct traveler. (b) Ten-inch bobbin, combination build, two inches from top of bobbin to thread eye.

Mill C: We have had some trouble with yarn on paper tubes sloughing at the spooler. (a) Our efforts at correcting this difficulty have been concentrated mostly on the proper adjustment of the builder on the spinning frame. We continually check for the proper stroke change and that the degree of taper is correct. A rule of thumb which we use to determine the correct amount of top taper is that it should be at least equal to the diameter of the ring. Some of our sloughing, of course, is caused by the doffers catching the bobbin on the taper. The only remedy we have found for this is constant training of doffers in proper handling of bobbins. (b) Bobbin size is No. 43 paper tube, ten-inch with .025 taper, warp wind, distance from top of the bobbin to lower yarn guide is 1½ inches.

Mill D: (a) We had to take the thread eye out of the

(Continued on Page 70)

Do You Have What It Takes To Be A Supervisor?

THE SUPERVISOR'S TRAINING BEGINS EVEN BEFORE HE IS A SUPERVISOR AND IS NEVER REALLY COMPLETED

PART 4

By WILMER WESTBROOK

LIKE other employees, the supervisor must be trained for his job. But, unlike some other employees, his job is so diversified, conditions so changeable, that his training is never really completed. He must constantly be learning new methods, processes and techniques.

It is not enough that the supervisor learn the rudiments of any phase of the operations in his department. He must know the subject thoroughly so that he can teach others.

Prospective supervisors are usually chosen from among the best and most ambitious workers in the department. They begin preparing themselves for greater responsibility by attending vocational classes, by enrolling in correspondence or night schools, by reading books and trade journals, and by asking questions. Their purpose is two-fold: to learn all they can about supervision so they will be ready when opportunity knocks, and to impress management with their ambitions and abilities.

Most prospective supervisors are eager beavers.

It is the problem of management to choose the one best fitted for a supervisory job and give him formal training. Usually management will begin grooming a supervisor before there is actual need of him in this capacity. There are several reasons for advance training:

(1) The supervisor is, of course, better prepared for the job if he learns the routine duties in advance.

(2) There is less confusion and resentment when the change is made if everyone in the department knows beforehand who the new supervisor will be.

(3) Preliminary training will help determine if the prospective supervisor is really suited for the job.

(4) The person being groomed for a future supervisory position can be used in an emergency—when a regular supervisor is sick or absent for other reasons.

There are many ways a prospective supervisor can receive advance training. Management in many cases will encourage him to enroll in correspondence or evening courses in supervision, personnel relations and kindred subjects. He may be invited to sit in on some departmental meetings and conferences.

Serving on committees and attending plant meetings is good experience for prospective supervisors.

The supervisor should know the rudiments of every operation—from design to packaging—even though many of these operations will not be in his department.

If it does not interfere with his regular duties he may be given some tasks that require mental effort, responsibility and co-operation with others.

When practicable, the prospective supervisor may be used when extra help is needed to take inventory, to make safety inspections, to install or test new machinery or processes.

When possible, the new supervisor will probably spend a day or more with the regular supervisor that he replaces, regardless of whether the regular supervisor is to be gone for only a few days or is leaving the job permanently.

The new supervisor must learn the job layout, the duties of each employee, the work schedule, the timekeeping procedure and the dozens of other details of the job.

Of course, he cannot learn all these details in one day, but if his advance training has prepared him in the rudiments of supervision, he can get by.

The supervisor should not neglect his training after he is placed on a regular job. He must learn and develop many of the needed skills on the job. If he is co-operative, the older supervisors will give him much valuable advice.

Throughout the supervisors' training he must remember that his biggest problem will be that of personnel or human relations. There are numerous courses and classes dealing with personnel relations and hundreds of good books have been published on the subject. Yet there is no sure-fire method or set formula for handling any given personnel problem.

A method that works fine in one instance may blow up in the supervisor's face the next time he tries it. Although there is a definite pattern of behavior, every worker is an individual and must be treated as such.

And, to repeat, a supervisor is no different in most ways than the other employees. Each is an individual and must work out his own formula for getting the work done. A supervisor must learn to properly evaluate his own strengths and weaknesses. He must develop personality traits such as friendliness and sincerity and learn to suppress traits like selfishness, conceit and unpredictable temperament.

Regardless of how well equipped a mill may be—it can have the latest machinery and the best of materials—it can't produce a pound of yarn or a yard of cloth without people. And both the quantity and quality of the product will be dependent upon the ability, effort and morale of the workers and the type of supervision that directs them.

53rd Annual S.T.A. Convention

(Continued from Page 37)

ing in line for the presidency in 1963-64—is D. H. Roberts of Lydia Cotton Mills, Clinton, S. C. Roberts previously has served as chairman of the association's South Carolina Division, and also as a member of the board of governors.

Etters

The new president, W. B. (Bo) Etters, is a native of Columbia, S. C., and like Roberts is a former chairman of the association's South Carolina Division. He has been a member of the S.T.A. since 1945. He began his career in the textile industry in 1935, joining Pacific Mills at Columbia as a trainee. He left Pacific in 1943 to join Dan River Mills. He became associated the same year with Laurens Mills at Laurens, S. C., serving as plant manager from 1950-54. He has been with Reeves Brothers since 1955 as its chief industrial engineer. He holds a B.S. in business administration from the University of South Carolina, has attended the University of Iowa, and is a graduate of Allen Morgensen's Work Simplification Course at Lake Placid, N. Y. His wife, Juanita Kirkland, is also a native of Columbia. They have one son, William B. Jr., age 22.

Cone

Herman Cone Jr., newly installed first vice-president, has been a member of the association since 1952, and is currently completing a second term as chairman of the association's Northern North Carolina-Virginia Division. He resigned as a member of the board to accept the divisional post. After attending the University of North Carolina and Harvard University, Cone joined his family's firm as a time study engineer in 1946. He was named assistant to the vice-president of the firm's rayon division in Greensboro in 1948; manager of the Pineville, Reidsville and Gibsonville, N. C., greige goods plants in 1952; and general manager of the flannel division at Greensboro in 1958. He and his wife Barbara, a native of Wilmington, N. C., have three sons—Herman III, 11, Robert C., 9, and Thomas E., 7.

Roberts

Dave Roberts, new second veep, has been active in the industry since 1935 and a member of the S.T.A. since 1941. A native of Spartanburg County, S. C., he began his textile career with Springs Cotton Mills in Fort Mill, S. C. He was named assistant overseer of weaving at Monroe Cotton Mill, Monroe, Ga., in 1941. In 1942 he joined Spartan Mills in Spartanburg, S. C., serving as overseer of weaving from 1945-53. He joined Lydia Cotton Mills as superintendent in 1953. His wife Evelyn is a native

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of Fort Mill. They have two daughters—Barbara, a senior at Winthrop College; and Kay, who plans to enter Winthrop this Fall.

New Board Members

Elected to four-year terms on the board of governors were Jesse Boyce, Erwin Mills, Durham, N. C.; J. P. Hughes, Cone Mills Corp., Hillsboro, N. C.; Rodger Hughes, Reeves Brothers Inc., Spartanburg; and Henry W. Suber, J. P. Stevens & Co., Great Falls, S. C. Boyce and Rodger Hughes just completed four-year terms on the board; Suber just completed an interim appointment made last Fall; and J. P. Hughes also serves as secretary of the group's Eastern Carolina Division.

Three vacancies created by resignations were also filled. Fred M. Wiley of Abney Mills, Greenwood, S. C., was named to a one-year term to succeed Louis Burkes, formerly of Calhoun Mills, Calhoun Falls, S. C., now manager of Postex Cotton Mills, Post, Texas. John L. Sherrill of Cone Mills Corp., Greensboro, was also named to a one-year term to succeed L. W. Thompson of Pacific Mills, Halifax, Va. Named to a two-year term was W. Marion Kirby of Catlin Farish Co., Batesburg, S. C. He succeeds Thomas E. Lawson, formerly of Pacific Columbia Mills, Columbia, S. C.

Associate Member Officers

In a separate election, the association's associate member division elevated Carl M. Chalmers from chairman of the division to chairman of the council. He succeeds E. Haines Gregg. Chalmers is with Texize Chemicals Inc., Greenville, S. C.; Gregg with A. B. Carter Inc., Gastonia, N. C.

Named chairman of the division to succeed Chalmers was Frank P. Barrie, Leesona Corp., Charlotte. Succeeding Barrie as vice-chairman is W. N. Dulaney, A. E. Staley Mfg. Co., Atlanta. Continuing as secretary of the division is Junius M. Smith, TEXTILE BULLETIN, Charlotte.

New council members named to two-year terms were C. Leon Jones, Odell Mill Supply Co., Greensboro; George W. Mallory, Foster Machine Co., Charlotte; S. A. Roane, Abbott Machine Co., Greenville, S. C.; Grover Henry, Penick & Ford Ltd. Inc., Spartanburg; and R. L. Mundhenk, West Point Foundry & Machine Co., West Point, Ga.

Golf Winners

Social features of the convention included an 18-hole golf tournament for the men, a nine-hole tourney for the ladies. Winners included:

Members Division

Low Gross	J. W. Chapman	Inman Mills, Inman, S. C.
2nd Low Gross	M. E. Seals	Carlton Yarn Mills, Cherryville, N. C.
Low Net	M. L. Brackett	Highland Park Mfg. Co., Charlotte, N. C.
2nd Low Net	R. P. Hardeman	Riegel Textile Corp., Ware Shoals, S. C.
3rd Low Net	H. Taylor Moser	J. P. Stevens & Co., Clemson, S. C.
4th Now Net	A. R. Marley	Erwin Mills, Erwin, N. C.
High Gross	J. T. Chalmers	Monarch Mills, Lockhart, S. C.

Oliver, Geer, McCrary

Winners in the ladies' golfing competition included Jan Oliver (Joe F. Oliver, Stodghill & Co., Atlanta), second low net; Mrs. Joe Geer (J. S. Geer, Wellington Mill, Anderson, S. C.), first low net; and Grace McCrary (R. M. McCrary, Hart Cotton Mills, Tarboro, N. C.), low gross.

Associate Division

Low Gross	C. Allan Matthews	C. Allan Matthews Co., Greensboro, N. C.
2nd Low Gross	Karl Selden	Buensod-Stacey Inc., Charlotte, N. C.
Low Net	E. J. Maslanka	National Starch & Chemical Corp., Charlotte, N. C.
2nd Low Net	T. H. Nelson	Penick & Ford Ltd. Inc., Spartanburg, S. C.
3rd Low Net	M. H. Creighton	Jenkins Metal Shops, Gastonia, N. C.
4th Low Net	A. E. Johnston	Ashworth Bros. Inc., Greenville, S. C.
High Gross	H. W. Harrison	Hurley & Harrison Inc., Greenville, S. C.

Ladies Tourney

Low Gross	Mrs. Grace McCrary	Hart Cotton Mills, Tarboro, N. C.
Low Net	Mrs. Joe Geer	Wellington Mill, Anderson, S. C.
2nd Low Net	Mrs. Joe Oliver	Stodghill & Co., Atlanta, Ga.
High Gross	Mrs. Richard Hartmann	Terrell Machine Co., Charlotte, N. C.

Winners in the men's 18-hole golf tournament included *(left to right)* H. Taylor Moser, J. P. Stevens & Co., Clemson, S. C.; M. L. Brackett, Highland Park Mfg. Co., Charlotte; M. H. Creighton, Jenkins Metal Shops, Gastonia; J. W. Chapman, Inman Mills, Inman, S. C.; A. R. Marley, Erwin Mills, Erwin, N. C.; and R. P. Hardeman, Riegel Textile Corp., Ware Shoals, S. C.

9% Drop Reported In First Quarter Production Of Cotton Broad Woven

Production of cotton broad woven fabrics during first quarter 1961 totaled 2,245,092 thousand linear yards, a drop of 9% below first quarter 1960, according to figures compiled by the Bureau of the Census. Compared with fourth quarter 1960, production remained at approximately the same level during the first three months of this year.

Percentagewise and by types of goods, figures for the three quarters reported on were as follows.

Summary Of Production By Class Of Fabric
(Thousands of linear yards)

Type of Goods	First Quarter 1961	First Quarter 1960	Percent Change 1961 to 1960
Duck	50,348	56,433	Down 11%
Sheeting	570,756	674,859	Down 15%
Print cloth	813,076	861,927	Down 6%
Colored	98,342	131,144	Down 25%
Towels	136,132	143,516	Down 5%
Napped	44,754	58,872	Down 24%
Fine cotton	419,478	430,191	Down 2%
Other	112,206	122,827	Down 9%
TOTAL	2,245,092	2,479,769	Down 9%

The 9% drop represents some 235 million linear yards.

First Quarter Production Of Man-Made Fiber Broad Wovens Drops 9% Below 1960

First quarter 1961 production of 584 million linear yards of man-made fiber broad woven goods was down 9% from the 642 million yards produced during first quarter 1960, the Bureau of the Census reports.

Production of rayon and acetate broad wovens was down 11%; other man-mades down 4%; silk down 21%.

By categories, the Census figures are as follows:

Summary Of Production By Class Of Fabric
(Thousands of linear yards)

Type of Fabric	First Quarter 1961	First Quarter 1960	Percent Change 1961 to 1960
Rayon and Acetate	344,048	388,386	Down 11%
Blanketing	11,542	14,698	Down 21%
100% Filament	166,087	162,865	Up 4%
100% Spun	48,690	58,721	Down 17%
Combination	20,009	29,100	Down 31%
Pile	40,521	52,003	Down 22%
Other	57,199	70,999	Down 19%
Man-Made Except Rayon And Acetate	230,122	240,978	Down 4%
Silk And Others Not Elsewhere Classified	9,539	12,142	Down 21%

McCabe To Address Combed Yarn Spinners

Robert D. McCabe, managing director of the Underwear Institute, will be the featured guest speaker at the annual meeting of the Combed Yarn Spinners Association September 7-9 at the Greenbrier, White Sulpher Springs, W. Va.

McCabe will address the general session on Friday morning, September 7, and J. L. Barnett, South Fork Mfg. Co., Belmont, N. C., outgoing president, will make his report. A golf tournament Friday afternoon will be followed by a reception in the evening and the annual banquet.

Third Annual Plant Engineering And Maintenance Show Set For Sept. 12-14

The third annual Southeastern Plant Engineering and Maintenance Show will be held in War Memorial Coliseum, Greensboro, N. C., September 12-14. Concurrently, the third

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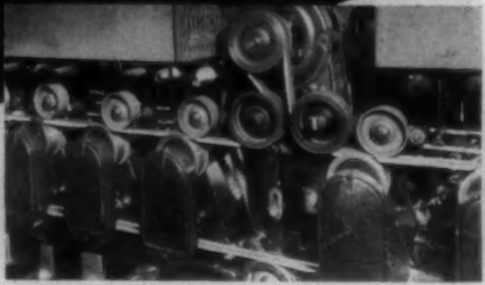

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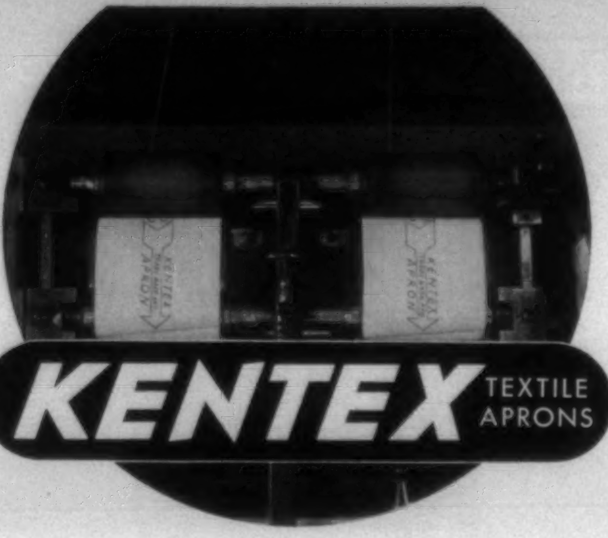

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Southeastern Seminar at the adjoining Town Hall will feature talks by outstanding engineering executives and group discussion of engineering and maintenance problems.

Products and services to be shown include electrical, heating, ventilating, air conditioning; painting, safety, and power transmission equipment; lubricants; paints; building materials; maintenance tools and supplies; welding; and materials handling. Admission to the show is free.

Deering Milliken Awards Construction Contract On Its Pilot Spinning Plant

Deering Milliken Research Corp. has announced that work will begin immediately on construction of its new cotton processing and spinning research facility in Spartanburg. Daniel Construction Co. has been awarded the building contract. Plans for the pilot spinning plant have been developed jointly by Deering Milliken and the membership of the Institute of Textile Technology. Conceived as the mill of tomorrow, the new facility will be equipped with machinery from the U. S., England, Switzerland, Germany and Japan. Purchases of foreign equipment have and will be made only when machinery of comparable performance and quality is not available domestically, it was pointed out.

T.O.E.G. Discussion

(Continued from Page 65)

bobbin pocket to prevent sloughing. (b) We run combination wind. We do not run thread eye on our ten-inch bobbin, but we run them on our $8\frac{3}{4}$-inch bobbin which is a wood bobbin and it is $1\frac{1}{2}$ inches from top to thread eye.

Mill E: (a) We corrected our sloughing at the spoolers by changing to a combination cam with a 3 to 1 ratio and ran our ring rail down fast and up slow on our spinning. (b) $2\frac{1}{2}$-inch ring—11-inch traverse, 7.84 ounces per bobbin, distance from top of bobbin to thread eye equals $1\frac{1}{2}$ inches. diameter of empty bobbin at top equals one inch.

Mill F: Some trouble has been encountered with sloughing from paper tubes on our Barber-Colman spoolers. (a) As yet we have found no remedy for complete cure. Improvements have been made by changes in lay of bobbin build and slight changes in spooler adjustments. (b) We use both ten-inch and 12-inch bobbins on combination build. The ten-inch bobbin is four inches from thread eye. The 12-inch bobbin top is $2\frac{1}{2}$ inches from thread eye.

Mill F: Yes, we have about 3% sloughs from combination wind on spooler. (a) Have had $\frac{1}{2}$-inch rings around bobbin. We use a straight bobbin. A specialist to handle builders on spinning frames will reduce sloughs. (b) We have a one-inch diameter bobbin, nine inches long and eight-inch stroke. The thread guide in bobbin pocket set about the diameter of the bobbin being wound, but might vary with bobbin length.

Effect Of Short Fibers In Cotton

(Continued from Page 57)

about 20/1000 spindle hours, end breakage increases exponentially with increases in spindle speed.

For a mill seeking to spin fine or low twist yarns at the maximum possible spindle speed the results obtained in this investigation point up the attractiveness of either (1) selecting cottons of low short fiber content initially; or (2) seeking means to reduce the short fiber content, which in the present state of the art would seem to mean combing. Also, for a mill spinning a diversity of yarn sizes and twists, proper consideration of short fiber content and the allocation of appropriate cottons to the various mixes should increase overall spinning efficiency.

Furthermore, while almost 70% of the American Upland cotton crop is concentrated in the 1-inch to $1\frac{1}{16}$-inch staple lengths inclusive *(10)*, care should be exercised in generalizing the findings of this series of investigations which dealt exclusively with this staple range to other staple lengths. This is particularly true when considering absolute amounts of short fibers since "the percent of short fibers tend to decrease significantly as the staple length increases"*(10)*. The important criterion in the utilization of any staple length cotton is not the percentage of short fibers but rather whether this percentage is excessive, normal or low for a specific staple length.

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Saco-Lowell's Rovematic

(Continued from Page 46)

connected and the gear locked against rotation. A clutch handle is provided on the front of the machine for this purpose.

(2) The builder must be reset to its maximum traverse position and the PIV unit reset to its original starting or empty package position. This is accomplished by means of a small hand wheel located just above the clutch handle used for running up loose roving.

(3) The bobbins must be run down to their lowest point in the traverse. A separate motor is arranged to drive the lay gearing with all other gears in the head end stationary. This will turn the spindle screws and the packages will traverse down.

(4) The packages are now ready to be doffed without removing any flyers.

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A rough estimate of $275 per spindle is somewhat higher than conventional roving frames, but Saco-Lowell reports that most of its '61 production has already been sold.

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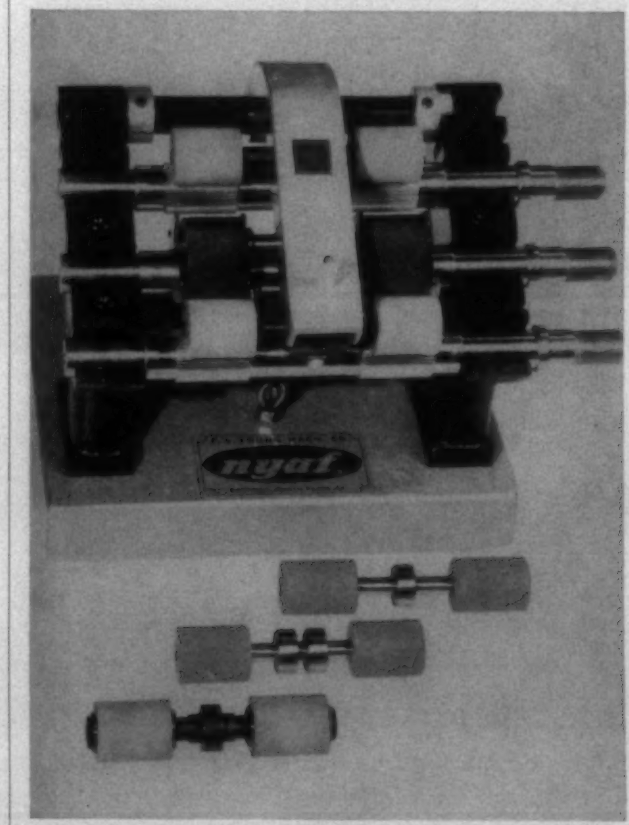

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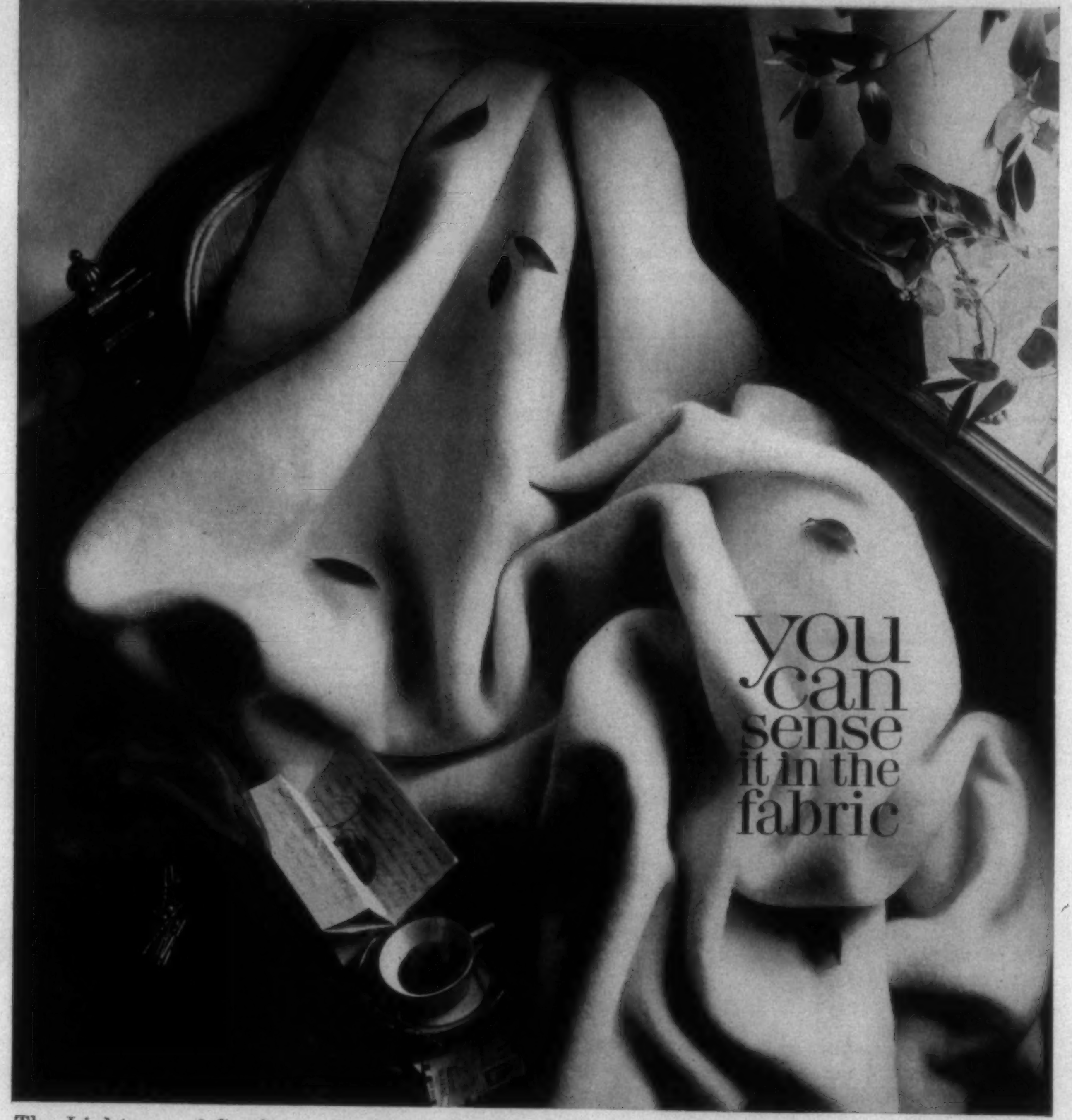

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PERSONAL NEWS

Reeves Brothers Inc., New York City, has announced two personnel changes within its organization. Robert M. Hicklin has been appointed production manager of the fiber division of the company and will be based in Spartanburg, S. C. He was formerly plant manager of the Reeves' Osage works at Bessemer City, N. C. . . . John B. Cornwell Jr. was promoted to director of technical sales service for Reeves' fiber division. Cornwell was formerly plant manager of Reeves Plastics Inc. of Fairmont, N. C. His base of operation will also be in Spartanburg.

Cornwell

Hicklin

Robert J. McCamy, assistant general manager of Pepperell Mfg. Co.'s Lindale (Ga.) division, has been promoted to assistant to the executive vice-president of the organization. His duties will include the co-ordination of manufacturing, finishing, styling, sales and customer relations. He joined Pepperell in 1932 and advanced to assistant superintendent of the Lindale division in 1942. He was promoted to superintendent in 1946 and was named assistant general manager in 1955. . . . Robert O. Simmons was named assistant general manager of the division. . . . Robert F. Horsley was promoted to general superintendent . . . Vance L. Cathey was moved to assistant general superintendent. . . . Jack Henderson was named cotton buyer for the Lindale division.

Hubbard

J. C. Hubbard, secretary and treasurer of The Springs Cotton Mills, Lancaster, S. C., and vice-president and treasurer of Springs Mills Inc., New York City, has retired from the organization after 27 years. In addition to his duties with these two companies, Hubbard was also an officer in 11 subsidiary or affiliated Springs companies. He joined Springs in 1934 as general auditor and head of the tax department. In 1938 he was elected to the board of directors of The Spring Cotton Mills; became secretary in 1947; and secretary and treasurer in 1951. . . . M. H. Smith, general auditor, has been elected assistant treasurer of the company. . . . A. J. Crane, formerly director of data processing, has been named controller for The Springs Cotton Mills.

Howard Callaway, president of Callaway Mills Co., LaGrange, Ga., has been elected secretary of the Southeastern Area Young Presidents Organization. John Redding, president of Pinehurst Textiles Inc., Asheboro, N. C., was elected president of the group, which is made up of men who became president of a million-dollar-a-year company before the age of 40.

Spears

Jackson E. Spears has resigned as vice-president of Burlington Industries Inc., in Greensboro, N. C. He will continue to serve Burlington on a consultant basis. Spears joined the company as a vice-president in 1952 when it acquired National Mallinson Fabrics Corp. where he had been a vice-president of sales. He is a director of Textile Distributors Institute and chairman of the Foreign Trade Committee of the American Cotton Manufacturers' Institute.

Russell B. Newton, president of the Deering Milliken Research Corp., Spartanburg, S. C., has been elevated to chairman of the board. Dr. Linton G. Ray Jr. was named to succeed Newton as president. During his nine year tenure as president of the corporation, Newton was instrumental in the development of the Belfast treatment, Agilon yarn, an automatic doffing system and a number of other devices for automatic doffing. Prior to joining Deering Milliken, he was president of Dan River Mills in Danville, Va. Dr. Ray, former director of textile research and later textile marketing manager for The Du Pont Co., Wilmington, Del., joined Deering Milliken Inc. as a vice-president in 1960.

Logue

Paul G. Logue has been appointed manager of textile sales for Wica Chemicals Inc., Charlotte, N. C. Logue's promotion from manager of the resin sales service department came after six years of service with Wica. His responsibilities will include supervision of textile chemical sales in North Carolina, South Carolina, Tennessee, Kentucky, Georgia, Alabama, Mississippi, Arkansas, Pennsylvania, Massachusetts and Rhode Island.

H. N. Sellers has been named plant engineer, Charlotte (N. C.) Development Laboratories, Celanese Fibers Co. He succeeds Norman S. Pliner who has been promoted to assistant engineering manager of the Celanese plant at Narrows, Va. Sellers joined the company at its Amcelle Plant at Cumberland, Md., in 1946, where he served in a number of engineering capacities and was instrument project engineer at the time of his transfer to Charlotte.

Edward L. Patton has joined Shell Chemical Co.'s textile chemical staff in Charlotte, N. C. Prior to his appointment, Patton conducted research in the wet processing and finishing fields at Shell's technical service laboratories in New Jersey. Before joining Shell, he was a research fellow for

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the Canvas Products Association International at the Southern Regional Research Laboratories in New Orleans. There he directed an extensive program on the improvement of canvas products for outdoor use. He is also the holder of several patent applications concerned with textile finishing.

Hayward

Dr. Bertrand Hayward has been re-elected president of the Philadelphia College of Textiles & Science. Hayward has served as president of the school since 1954. Re-elected as the chairman of the board was Everett L. Kent, Kent Mfg. Co. Elected to the board for three-year terms were: Joseph B. Seitchik, president of Seitchik & Sons, Philadelphia, and head of the Philadelphia Clothing Manufacturers Association; and Marshall Palmer, director of administration, J. P. Stevens & Co.

Uster Corp., Charlotte, N. C., has announced a number of management changes. C. Venoy Boliek will take over the position of manager and will be responsible for coordinating the operations of the sales, engineering, installation, service, advertising and Knitrol departments. . . . Hans Winiger will assume the duties of sales manager of product sales, which include all Uster testing equipment as well as specialized warp preparation equipment. . . . William B. Floyd will head up the expanded engineering department and will be particularly concerned with the sales of special applications such as continuous denier control systems. . . . Jack Taylor has been made assistant to the manager and will handle service, customer relations and promotional activities. . . . George C. Fryer becomes advertising and sales promotion manager, in addition to serving in this same capacity for Pneumafil Corp.

Strahley

Robert F. Strahley has been appointed assistant division manager of the Franklin Process Co., Chattanooga, Tenn., a division of Indian Head Mills Inc. In his newly created position, Strahley will be in charge of operations of the Franklin Process Co.'s three plants at Greenville and Fingerville, S. C., and Chattanooga, Tenn. Strahley began his career with the Franklin Process Co. in 1926 at the Greenville, S. C., plant. He became production manager of the Chattanooga plant when it was built in 1927 and was made plant manager in 1952.

Two additions have been made to the Chemstrand Research Center Inc. staff in Durham, N. C. James H. Cox has been retained as a research chemist and has been assigned to the new product spinning group. Before assuming his new position, Cox was assistant professor of textile chemistry at Auburn University, Auburn, Ala. Prior to this, he had seen service with Celanese Corp. of America at Rome, Ga.; Goodyear Tire & Rubber Co., Atco, Ga.; and Holeproof Hosiery Co., Marietta, Ga. . . . Franklin T. Osborne has joined the Center as a research chemical engineer and will be working with the Acrilan fundamental spinning group. He is a 1961 graduate of Texas A&M University.

Robert L. Richards has retired as vice-president and member of the executive committee of The Du Pont Co., Wilmington, Del. He will continue with the company as a director. Richards has been a director, vice-president and member of the committee since 1954. He has been with the company for 38 years in various supervisory capacities in the management and production of textile fibers and cellophane. . . . Charles B. McCoy, general manager of the explosives department, has succeeded Richards as a member of the executive committee.

J. D. Hairston, secretary, has retired from Lydia Cotton Mills after 44 years of service. He joined Lydia in 1914, working during summer vacation on various jobs in the mill. In 1917, he became paymaster for the organization. After rising through the ranks, Hairston was named secretary of the company in 1948.

Brouillard

Dr. R. E. Brouillard has been named vice-president and director of marketing for the paper and textile industries for the corn refining division of Penick & Ford Ltd., New York City. Prior to joining the company in 1960 as assistant to the vice-president, Dr. Brouillard was associated with General Aniline & Film Corp.

Cecil H. McDaniel has been named assistant purchasing agent for Stone Mfg. Co. of Greenville, S. C. McDaniel was formerly associated with the William Carter Co. of Barnesville, Ga., where he held a position in their production control department. Stone Mfg. Co., producer of Stoneswear, is a manufacturer of children's sportswear, women's and children's lingerie, and men's underwear.

Robert A. (Bob) Turner, co-ordinator of recreation for West Point Mfg. Co., West Point, Ga., was elected president of the National Industrial Recreation Association at that group's recent meeting. Turner's term of office will be one year. He had previously served as a director and a vice-president of the organization and has been associated with it since its beginning 20 years ago. He is considered one of the founders of the national group.

Leslie L. Walmsley of American Viscose Corp., Philadelphia, Pa., has been assigned technical service responsibilities to the dyeing and finishing trade. In his new post, Walmsley will work closely with the dyeing and finishing division carrying on much of the work formerly handled by Arthur R. Wachter who has retired. During the past 18 years, he has been a staff member of the technical service department, part of this time serving as head of the dyeing and finishing division. In this capacity, he did co-operative work on customer problems and developments on a dyeing and finishing level at customers' plants.

Bell

W. Raymond Bell is resigning as president of the Association of Cotton Textile Merchants of New York, effective September 1. As the official spokesman for the group, he has long been prominent in industry affairs. A native of Concord, N. C., and a graduate of Duke University, he joined the association as its secretary in 1932, becoming its president in 1934. Prior to that he was associated with Cannon Mills, serving as manager of its sheeting department from 1922 to 1929. He joined Cannon in 1911 and served as its export manager before serving with the military in World War I. He was named executive vice-president of the Cotton Textile Institute in 1929, remaining in that post until joining A.C.T.M. in 1932.

Robert C. Baker, president of American Security & Trust Co. and Perkins McGuire, former Assistant Secretary of Defense, have been elected to the board of directors of Burlington Industries Inc., Greensboro, N. C. Baker has been associated with American Security & Trust Co., Washington, D. C., since 1946 and is currently also president of its affiliate, American Security Corp. McGuire, prominent in retailing prior to being named a Deputy Assistant Secretary of Defense in 1955, was named an Assistant Secretary of Defense in 1956 and served in that capacity until January 1961.

Claude M. Banks has been named manager of repair parts and changeover sales in the South for Whitin Machine Works, Whitinsville, Mass., and will work out of the Charlotte office. Reporting directly to Banks will be James D. Stone and Douglas F. Elms, repair salesman.

Tesoro

Dr. Giuliana C. Tesoro has been named an assistant director of research for J. P. Stevens & Co. Inc., New York City. Her duties will continue to include responsibility for expanded organic chemical research, which she has headed since 1958.

Fred W. Langdon has joined Riegel Textile Corp. as product development manager of the Johnston (S. C.) division. He will be responsible for the development of new products for the Johnston division and for the introduction of these products to the market. Prior to joining Riegel, Langdon was president of his own company, Barkana Sales, a marketing agency for new consumer products.

Collins & Aikman Corp., New York City, has announced a realignment of its top executives. Donald F. McCullough has been elected president and chief officer of the company. Since 1954, he has been executive vice-president of sales. He joined Collins & Aikman in 1946 as sales manager of the yarn division. . . . Ellis Leach, president since 1956, was named chairman of the board. . . . Robert M. McCullough, who is and will continue to be, executive vice-president of manufacturing, has taken over as chairman of the executive committee. . . . Albert R. Jube, who has retired as chairman of the executive committee, was named vice-chairman of the board. . . . Robert M. Stroker, general manager of the automotive division, has been elected a vice-president.

John W. Connell has been elected a vice-president of Indian Head Mills Inc., New York City. He was formerly assistant to the president and has held a number of key sales, manufacturing and administrative positions with the company since its organization in 1953. In his new post, Connell will be responsible for staff services, a newly-created position in the company. He graduated from the Advanced Management Program of the Harvard Business School in 1960 and is a member of the American Management Association.

Fieldcrest Mills Inc., Spray, N. C., has announced several personnel changes in its production supervisors. J. Melvin Moore, formerly assistant to the superintendent of the Karastan Spinning Division, Greenville, N. C., has been named superintendent, succeeding Vernon E. Howell, who has resigned. Moore has been associated with Fieldcrest for over 25 years, working as foreman of the wool spinning department at Draper for 17 years. He was transferred to Greenville in 1960. . . . Dwight A. Wilkinson, general foreman of the finishing mill and bleachery has been transferred to the towel mill, where he will be named foreman of the plant service department when J. W. Norris Sr. retires next year. . . . Glenn H. Simpson, foreman of the sheet sewing department at the bleachery, was named to replace Wilkinson. . . . Marvin E. Clifton, assistant foreman in the sheet sewing department, has been named foreman of sheet sewing. . . . Jack R. Hall Jr., assistant foreman in the sheet sewing department also, has been promoted to foreman of sheet packaging.

Harmon

William A. Harmon has joined the development engineering staff of James Hunter Inc., Mauldin, S. C. Prior to his move, Harmon was with Cen-Tennial Cotton Gin Co. of Columbus, Ga., where for the past nine years he was head of the textile department. In this post Harmon concentrated on the design and development of opening and cleaning machinery. In addition to being with Cen-Tennial, he was with the engineering department of Firestone Textiles in Gastonia, N. C., for ten years.

W. J. Fullerton has joined Hartford Fibres Co., division of Bigelow-Sanford Inc., New York City, as assistant to the vice-president of Bigelow-Sanford, in charge of the Hartford Division. In the new post Fullerton will be in complete charge of all marketing, merchandising, sales promotion and advertising activities for Hartford's new Zantrel polynosic fiber. Fullerton comes to Hartford Fibres from Waldburger & Co., New York City, where he was executive vice-president for three years. A veteran of 30 years in the textile industry, he has served in top executive posts with Lorraine Mfg. Co., Dan River Mills and Mooresville Mills.

J. D. Johnson, sales engineer for the American Moistening Co., Atlanta, Ga., has retired from the company after 53 years of service. During his tenure with American Moistening, Johnson acted in various capacities in both the Charlotte, N. C., and Atlanta offices. At the time of his retirement, he was acting as sales engineer for parts of the Georgia territory.

Two sales appointments have been announced by U. S. Rubber Co.'s textile division, New York City. Joseph B. Jackson was named field sales manager of the textile division's Western district. W. Lindsay Wylie will succeed Jackson as sales manager of tufting, chenille and floor covering yarns. Jackson has been with U. S. Rubber since 1933 when he joined the production staff at the company's plant in Hogansville, Ga. In 1951 he was transferred to the textile division's sales organization at Gastonia, N. C., and three years later to Reading, Pa. In 1954 he was appointed assistant sales manager and in 1957 sales manager of tufting, chenille and floor covering yarns in the company's New York office. Wylie is

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a graduate of Clemson College and joined the company in 1951. During his ten years of service with the firm he has served in various production, development and sales capacities. He is a former instructor at Clemson College and recently completed the Program For Management Development at Harvard Business School.

Joe Grant has been appointed personnel manager of the Clarksville (Ga.) Mill, a member of the United Merchants & Manufacturers chain. He was formerly assistant personnel manager at the Union-Buffalo Mills in Union, S. C. Grant replaced Jack Grant, who was transferred to Statesville (N. C.) Mills.

Eugene W. Owen of Canton Cotton Mills, Canton, Ga., has been named chairman of the Personnel Managers Division of the Georgia Textile Manufacturers Association. Other officers elected included: Virgil E. Adams, Jefferson, Ga., vice-chairman; and O. B. Moore Jr. of Atlanta, secretary.

Charles D. Green, vice-president and director of Reeves Brothers Inc., New York City, has been named to head the company's Curon polyurethane foam division as general manager of sales and production. He has been an officer of the company for many years and most recently in charge of the finished goods (textiles) division.

OBITUARIES

Robert Sidney Bradley, 70, retired district service manager of Saco-Lowell Shops at Easley, S. C., died July 7. Mr. Bradley retired in 1957 after working at Saco-Lowell for 41 years. Survivors include his widow, two sons and a daughter.

Edward F. Hayes, 52, executive vice-president of Riggs & Lombard Inc., Lowell, Mass., died recently from injuries received in an automobile accident. Prior to joining Riggs & Lombard, he had been vice-president and general manager of the Talbot Mills, North Billerica, Mass., for many years. Mr. Hayes was a member of the American Association of Textile Chemists & Colorists and other textile trade associations.

James Lewis Jewell, 81, retired general manager of the former Saxon Mills in Spartanburg and Chesnee, S. C., died recently in Greenville, S. C. Mr. Jewell retired in 1945 after 25 years with Saxon.

mill news

CONSTRUCTION, NEW EQUIPMENT, FINANCIAL REPORTS, CHARTERS, AWARDS, VILLAGE ACTIVITY, SALES AND PURCHASES

LaGrange, Ga. — Construction has begun on Callaway Mills Co.'s new general office building here. Completion has been set for July 1, 1962. The new building will be located just northeast of the present building; will be two stories high; and will contain approximately 42,000 square feet.

Greenville, S. C. — Construction of Maverick Mill's new plant is expected to get underway within a few weeks with the building completed and ready for machinery sometime in mid-Fall. The new building, costing some $5 million and having some 250,000 square feet, will have steel frame and brick construction.

New York, N. Y.—Sales and net profits of Indian Head Mills Inc., advanced to record highs for the second quarter and first half year, according to the company. Sales of the diversified textile manufacturing and service company totalled $23.7 million in the three months ended June 3, up 37% from sales of $17.2 million in the comparable period last year. Net profits were $937,000 after federal income taxes and preferred stock dividends. In the second quarter of 1960, net profits amounted to $817,000. No federal income taxes were incurred, due to the availability of loss carry-forward credits. In the six months ended June 3, sales increased 41% to $43.4 million from $30.7 million in the first half of 1960. Net profits amounted to $1.6 million after federal income taxes and preferred stock dividends. This compared with $1.4 million in the first six months of 1960. Profits in 1961 are after provision of $100,000 for federal income taxes, whereas no such provision was required in 1960. Commenting on the outlook, James Robison, president, said: "In previous years the second half has been better than the first, and this is expected to be the case again this year. Consequently, with general business now showing signs of improvement, we are optimistic that 1961 will be another satisfactory year for the company."

Whitinsville, Mass.—Whitin Machine Works has announced that The Kendall Co.'s Mollohon Plant, Newberry, S. C., and Spartan Mills' Beaumont Division, Spartanburg, S. C., will receive a combined total of 46 of the company's Model M7, 2-delivery, high-speed Even-Draft drawing frames—14 to Kendall and 32 for Spartan Mills. The Model M7 is a high-speed drawing frame capable of 800 feet per minute on carded stock, according to Whitin.

Gastonia, N. C.—F. A. Young Machine Co. has been awarded two contracts by Southern mills. Abbeville (S. C.) Mills is to install long staple, high-draft changeovers on ten spinning frames. This application is designed to permit the use of Deering Milliken's automatic doffer. The N.Y. A.F. moulded nylon bearing steel cradles are to be used on this installation. Martha Mills, Thomaston, Ga., will have double apron Roth High-Draft changeovers on 80 Saco-Lowell frames.

Newberry, S. C.—Personnel of Newberry Mills have voted 311 to 267 to retain the United Textile Workers of America union as their bargaining agent. A total of 580 votes were cast out of a possible 640. Two votes were voided by the National Labor Relations Board.

Charlotte, N. C.—Pat Hall Enterprises Inc. has purchased the land, buildings and equipment of Continental Mills, Lewiston, Me. The real estate and machinery will be offered for resale as a going concern. If a purchaser is not found within a reasonable time, the machinery will be liquidated and the real estate offered separately. The plant has approximately 524,000 square feet with 90,000 spindles and 1,800 looms. It has been running on cotton and Dacron polyester blends.

Landrum, S. C.—Landrum Mills, subsidiary of Bigelow-Sanford Inc., has announced plans for a second story addition to be constructed on its present plant here. The facility has been designed to eliminate a communications problem between Bigelow-Sanford mills in the South and the New York accounting and planning offices. The move is to be made on a progressive basis and is not expected to be completed for some time. A new R.C.A. 501 computer is to be installed in the addition when completed.

Greensboro, N. C.—Burlington Industries Inc. has confirmed reports that negotiations are in process for the purchase of Globe Mills Co. of Mount Holly and Lincolnton, N. C. No final agreement has been reached, however, and the purchase has not been completed. The Mount Holly plant has some 72 cards, 24 combers and 16,000 spindles. The Lincolnton plant is equipped with 65 cards and 22,032 spindles.

Durham, N. C.—A city building permit for construction of a $1.4 million bleaching and finishing plant here has been issued to Erwin Mills Inc. The new plant, designed to replace one built in 1910 and since enlarged several times, will be two stories of reinforced concrete and brick construction.

New York, N. Y.—J. P. Stevens & Co. has purchased Samuel Hird & Sons name and will incorporate the Hird sales organization into Stevens as a department to be headed by Stanley Baron. Fabrics are to be sold under the Hird label and Stevens said that the Hird business and fabrics will be maintained. Floyd Hird, vice-president and secretary of Samuel Hird & Sons, said that the mills were being liquidated because of too small a return on the stockholders' investments and also because of the government's "expendable" attitude toward domestic worsted mills.

New York, N. Y.—U. S. Rubber Co. has announced an expansion program at its Gastonia, N. C., plant that is designed to double production facilities of Vyrene, the company's new spandex thread. The expansion will be completed by the end of August. It is the second expansion of these facilities this year. Demand for Vyrene exceeds supply, William E. Clark, vice-president and general manager, explained. "There will be still further expansions of our Vyrene production facilities in the third and fourth quarters of this year," Clark said.

Textile Industry Schedule

For additional data (reservation requirements, membership requirements, program details, etc.) on activities listed here, contact name(s) shown in parentheses.

Sept. 7-8 (Th-F)—Annual meeting, Combed Yarn Spinners Association, The Greenbrier, White Sulphur Springs, W. Va. (Exec. Sec.: James H. Campbell, 427 W. Franklin Ave., Gastonia, N. C.)

Sept. 14-15 (Th-F)—Annual Outing, Chattanooga Yarn Association, The Reed House, Chattanooga, Tenn. (Chattanooga Yarn Association, Chattanooga, Tenn.)

Sept. 15-16 (F-Sa)—Fall meeting, Palmetto Section, A.A.T.C.C., Clemson House, Clemson, S. C.

Sept. 21-22 (Th-F)—Fall meeting, Southern Textile Methods and Standards Association, Clemson House, Clemson, S. C. (Howard L. Loveless, Exec. Sec., S.T.M.A.S.A., P. O. Box 10144, Knoxville, Tenn.)

Sept. 21-22 (Th-F)—Annual meeting, Carded Yarn Association, The Cloister, Sea Island, Ga. (Exec. V.-P.: E. O. Fitzsimons, P. O. Box 869, Charlotte 1, N. C.)

Sept. 23 (Sa)—Fall meeting, Piedmont Section, A.A.T.C.C., Hotel Charlotte, Charlotte, N. C. (Sec.: E. P. Lavoie, Morningstar-Paisley Inc., Box 3622, Charlotte, N. C.)

Sept. 28-30 (Th-Sa)—National convention, American Association of Textile Chemists & Colorists, Hotel Statler, Buffalo, N. Y. (A.A.T.C.C., P. O. Box 28, Lowell, Mass.)

Oct. 5-6 (Th-F)—Fall meeting, Textile Quality Control Association, Sedgefield Inn, Greensboro. (Sec.: Werner Pels, National Cotton Council, Ring Bldg., Room 502, 1200—18th St., N.W., Washington 6, D. C.)

Oct. 5-7 (Th-Sa)—Annual meeting, North Carolina Textile Manufacturers Association, Carolina Hotel, Pinehurst, N. C. (Sec.: T. N. Ingram, 1008 Wachovia Bank Bldg., Charlotte, N. C.)

Oct. 7 (Sa)—Fall meeting, Alabama Textile Operating Executives, Thach Auditorium, Auburn University, Auburn, Ala. (Exec. Sec.: Cleveland L. Adams, Auburn University)

Oct. 12-21 (Th-Sa)—North Carolina Trade Fair, Charlotte Coliseum and Merchandise Mart, Charlotte, N. C.

Oct. 14 (Sa)—Fall meeting, South Carolina Division, Southern Textile Association, Clemson, S. C. (Chairman: E. L. Ramey, Inman Mills, Inman, S. C.)

Oct. 21 (Sa)—Fall meeting, Northern North Carolina-Virginia Division, Southern Textile Association, Cooleemee, N. C. (Chairman: Herman Cone Jr., Cone Mills Corp., Greensboro, N. C.)

Oct. 28 (Sa)—Fall meeting, Eastern Carolina Division, Southern Textile Association, School of Textiles, N. C. State College. (Chairman: Gilbert C. Mays, Erwin Mills, Durham, N. C.)

Nov. 1-2 (W-Th)—Annual meeting, Textile Engineering Division, American Society of Mechanical Engineers, Massachusetts Institute of Technology, Cambridge, Mass. (Chairman: Prof. Elliot B. Grover, School of Textiles, North Carolina State College, Raleigh.)

Nov. 8-9 (W-Th)—Chemical Finishing Conference, sponsored by the National Cotton Council, Sheraton Park Hotel, Washington, D. C. (National Cotton Council, Ring Bldg., Room 502, 1200-18th St., N.W., Washington 6, D. C.)

Nov. 9 (Tu)—Fall meeting, Piedmont Division, Southern Textile Association, Johnston Memorial Y.M.C.A., Charlotte. (Chairman, J. W. Inscoe, Carolina Mills Inc., Maiden, N. C.)

1962

Jan. 11-12 (Th-F)—13th annual Cotton Research Clinic, The Carolina Hotel, Pinehurst, N. C. (National Cotton Council, Ring Bldg., Room 502, 1200-18th St., N.W., Washington 6, D. C.)

April 11-13 (W-Th)—Spring meeting, Textile Engineering Division, American Society of Mechanical Engineers, together with **The Fiber Society, Raleigh, N. C.** (Chairman: Elliot B. Grover, School of Textiles, North Carolina State College, Raleigh.)

May 2-5 (Tu-F)—Annual outing, Carolina Yarn Association, Pinehurst, N. C. (Exec. Sec.: Frank P. Barrie, P. O. Box 11411, Charlotte, N. C.)

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday; (Su) Sunday

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Vol. 87 AUGUST 1961 No. 8

textile bulletin

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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; two years payable in advance, $2.00; one year, Canada, $3.00; one year, other countries in Postal Union, $5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

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The 94% Comes First

ASSUMING that the GAAT (General Agreement on Tariffs and Trade) meeting in Geneva results in an agreement to limit cotton textile imports to this country at their record 1960 level, where does that leave U. S. mills?

An interesting conjecture is offered by *The Value Line Investment Survey* published by Arnold Bernhard & Co., New York City investment advisors, in its issue of July 10.

"The U. S. industry will have two choices. (1) It could fight to regain the 6% (of the domestic market lost to foreign imports) or a portion thereof by keeping its price structure low, or (2) it could concede this 6% to the foreigners and raise prices back to a level consistent with the domestic competitive situation.

"Simply stated, the choice is between realizing a low margin of profit on all its business, with the doubtful chance of getting a little bit more, or obtaining a reasonable profit on 94% of the total business. Obviously the second choice is the more profitable one. Moreover, the foreign producer may be inclined to raise his price if he knows he can only garner so much of the market anyhow. This would tend to improve the price structure.

"To be sure, there would be limitations to this theory in practice. The domestic industry is not highly concentrated. Each individual seller must make his pricing decisions for himself. The anti-trust laws effectively prohibit overt collusion among manufacturers. But, if the majority of producers recognize the import problem for what it is, a strengthening of the price structure could occur.

"This would take statesmanship on the part of the industry leaders but it is not beyond their capabilities. Another practical limitation is caused by the fact that only cotton textile shipments will be restricted. Foreign producers may be inclined to switch their emphasis to man-made fibers or wool. Finally, there is the problem of policing. Will the foreign producers live up to the agreement, if in fact any agreement is to be forthcoming?

"There is one other action the government might take to improve the industry's position. Domestic manufacturers must pay substantially more for raw cotton than the rest of the world does. . . . In his Seven Point program, President Kennedy directed the Department of Agriculture to formulate a plan to eliminate or offset the differential in prices for cotton paid by the domestic and foreign industries. Presumably this would be accomplished through the payment of a subsidy or some other such device. As yet no action has been taken on this matter.

"To sum up, then. If the government obtains international agreement on its proposal, the domestic industry will not have gotten what it asked for. It will not get a 'rollback' of imports to some prior level. But it will nonetheless have received something which could be important—namely a formal limitation on just how much of the U. S. market the foreign producer can take. This may be all that the industry had a right to expect in the first place.

"The foregoing should not be taken to imply that the domestic textile market will be characterized by a lack of competition if the proposed agreement is ratified. Far from it. But the domestic manufacturer will be competing in the main against another domestic manufacturer who has no inherent cost advantage. This will not automatically allow the domestic industry a return on its capital consistent with the more prosperous sectors of the economy. This is something the individual management must do for itself. But it should help to provide an environment whereby the textile industry can participate in the recovery now getting underway."

We don't propose that the industry "surrender" any of the domestic market to foreign producers. But the point in calling attention to the foregoing observation by outside interests is to emphasize the importance of the 94% of the market. At the moment the import problem is being countered as best it can be and there isn't much else the industry can do about it. It follows that more must be done in the domestic market.

Latest available Commerce Department figures report a 9% drop in first quarter 1961 production of cotton broad woven fabrics; a 9% drop, too, in man-made fiber broad wovens; and a 14% drop in woolens and worsteds. Second quarter levels are higher, and an upward trend may be starting, production-wise if not pricewise. The best that mills can do now is get in their best competitive trim.

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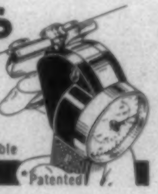

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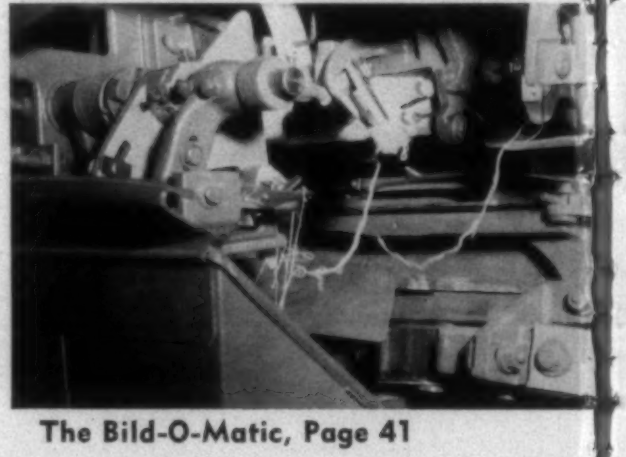

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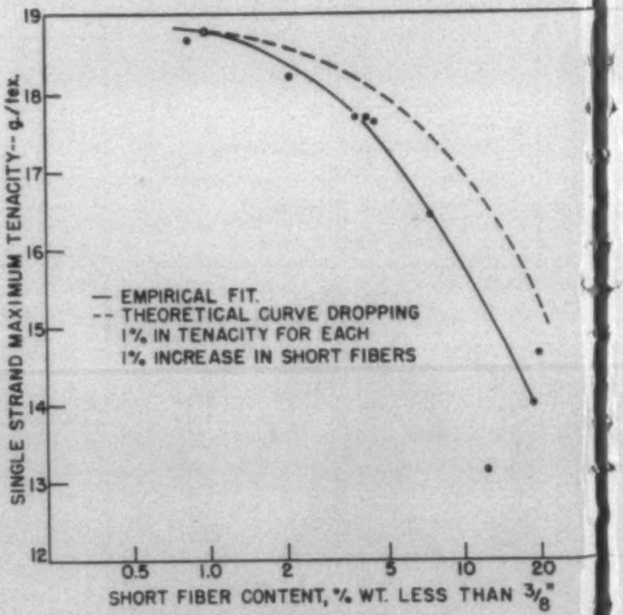

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SEND FOR A P&F TEXTILE SERVICE MAN!

The know-how of our textile experts goes far beyond the proper use of P&F starch products, and so do their suggestions. Each man on our technical service staff brought to his job outstanding technical skill and problem-solving ability—the basis of selection. Further experience as a Penick & Ford representative broadened and deepened his knowledge in the textile field. Behind him are the personnel and facilities of P&F's advanced research laboratory.

If you're interested in improving your operations—and who isn't—don't overlook this opportunity to get a fresh slant from a "pro." No strings attached.

Penick & Ford

PENICK & FORD, LTD.
INCORPORATED
1531 Marietta Blvd., Atlanta, Ga.

The P&F Textile Service Man tests yarns and fabrics for added weights, tensile and other properties

Checks out your warp sizing, finishing and glazing solutions under actual production conditions

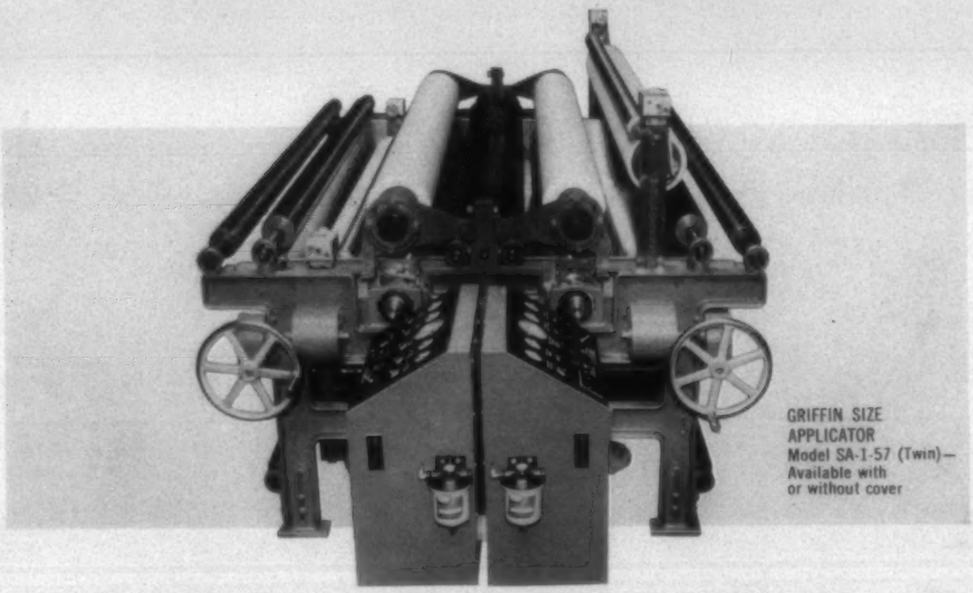
Studies equipment and methods . . . uses his wide experience to help you attain top performance

More than 500 varieties of starches and starch derivatives in these families: Penford Gums • Pensize Gums • Penford Finishing Gums • Essex Gums • Clearsol Gums • Douglas Pearl Starches • Douglas Modified Starches • Douglas Dextrines • Douglas Oxidized Starches

Patent No. 2,794,236

makes variable-pressure squeeze roll sizing

a GRIFFIN EXCLUSIVE!



GRIFFIN SIZE APPLICATOR
Model SA-1-57 (Twin)—
Available with
or without cover

On the GRIFFIN SIZE APPLICATOR — and *only* on the GRIFFIN SIZE APPLICATOR — squeeze roll pressures may be varied automatically with slasher speed, to give you uniform size pickup on every yard of warp!

This feature — virtually a must for highest quality weaves and production efficiency — is a patented GRIFFIN exclusive. The Griffin patent covers any means (or combination of means) for achieving this action in a size box. Thus, the *only* way you can get variable squeeze-roll sizing is by installing Griffin Size Applicators!

Why the Variable Pressure Squeeze is Important to You
When slasher speed is cut, insufficient size will be retained by the warp ends *unless squeeze roll pressures are released* in the size box. Here the Griffin Size Applicator offers a vast improvement over conventional size boxes.

On a GRIFFIN, squeeze roll pressures are automatically released when the slasher goes from running to creep speed or stops. This exclusive feature reduces variations in size pickup to *less than one percent*—from one end of the warp to the other!

Of course, uniformly sized warps like this mean more dependable performance in weaving—fewer loom stops, better quality weaves, and savings in time and labor.

Griffin Makes Controlled Sizing a Reality
In addition to the variable pressure squeeze, Griffin Size Applicators offer many exclusive features . . . features that mean improved, more controlled sizing with resulting economies throughout the production process.

In a Griffin Size Applicator, yarn is always in contact with driven rolls—and never under tension when wet with size. Ends cannot roll, tape, or cross; they are held parallel while passing through the size—and leave the Size Applicator in exactly the same position as they entered from the creel.

Griffin's metal cover keeps lint and foreign matter away from the warp and out of the size—preventing many broken ends. And this cover, together with the insulated size pan, helps hold the heat, save steam, and reduce dilution of size by condensation.

There are six models of the Griffin Size Applicator, designed to fulfill every slashing requirement—and outperform conventional size boxes in every respect.

Only Griffin offers truly controlled sizing—for the nearest thing yet to a perfect weaving warp! Why not investigate how Griffin Size Applicators can help you improve production quality while lowering production costs? Write, wire, or phone—no obligation!

Exclusive Licensees

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